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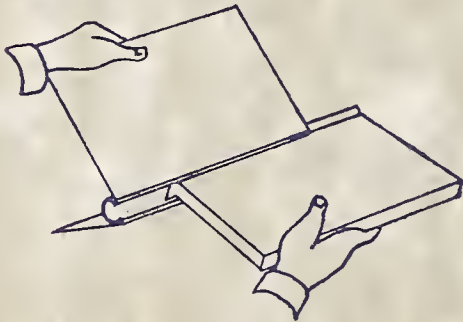
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# Brampton springback binder

Directions for use:

- 1 Place inner back cover on table. Take front cover in left hand and press gently just enough to slide out inner container
- 2 Insert contents into inner container and slide back
- 3 Never force open binder more than necessary  
Never try to pull the sides apart



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Ref		Taking sheets up to:	
		ins	mm
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No 3	Foolscap	13½ x 8½	350 x 216
No 03	Foolscap oblong	8½ x 13½	216 x 350
No 4	Music	14½ x 10¾	370 x 274
Continental A4		11¾ x 8¾	300 x 211
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A. L. GOODSON & D. K. READ.

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Volume 11

Geometridae Part 2







abbreviata Stephs.	E.	189.	fasciaria Linn.	E.	213.
abietaria Goeze. see pini Retz.		157.	flammeolaria Hufn.	H.	147.
absinthiata Clerck.	E.	171.	flavicinctata Hbn.	E.	112.
adustata Schiff.	L.	206.	flavofasciata Thnbg.	P.	135.
affinitata Stephs.	P.	133.	furcata Thnbg.	H.	140.
albicillata Linn.	M.	126.	fuscantaria Stephs.	D.	218.
albulata Hufn.	A.	150.			
albulata Schiff.	P.	136.	galiata Schiff.	E.	129.
alchemillata Linn.	P.	134.	goossensiata Mab.	E.	172.
alniaria Linn.	D.	217.	grossulariata Linn.	A.	203.
alternata Müll.	E.	130.			
assimilata Dbldy.	E.	170.	haworthiata Dbldy.	E.	154.
atrata Linn.	O.	202.	helveticaria Bsd.		
autumnaria Wern.	E.	215.	see intricata Zett.		167.
badiata Schiff.	E.	143.	icterata Vill.	E.	177.
berberata Schiff.	C.	115.	indigata Hbn.	E.	182.
bidentata Clerck.	G.	225.	infrequentata Haw.		
bifaciata Haw.	P.	139.	see caesiata Schiff.		111.
bifasciata Haw.			innotata Hufn.	E.	186.
see bifaciata Haw.		139.	insigniata Hbn.	E.	162.
bilineata Linn.	E.	122.	inturbata Hbn.	E.	153.
bilunaria Esp.	S.	220.	intricata Zett.	E.	167.
bimaculata F.	B.	208.	irriguata Hbn.	E.	160.
blandiata Schiff.	P.	138.	isogrammaria H.-Sch.		
blomeri Curt.	D.	149.	see haworthiata Dbldy.		154.
caesiata Schiff.	E.	111.	lapidata Hbn.	C.	199.
cambrica Curt.	V.	145.	lariciata Frr.	E.	191.
campanulata H.-Sch.			lignata Hbn. see vittata Bkh.		105.
see denotata Hbn.		173.	linariata F.	E.	158.
candidata Schiff.			luctuata Schiff.	E.	121.
see albulata Hufn.		150.	lunaria Schiff.	S.	221.
castigata Hbn.	E.	176.	luteata Schiff.		
centaureata Schiff.	E.	164.	see flammeolaria Hufn.		147.
coerulata F.	H.	141.			
comitata Linn.	P.	144.	margaritata Linn.	L.	214.
consignata Bkh.			marginata Linn.	L.	205.
see insigniata Hbn.		162.	millefoliata Rüssl.	E.	192.
coronata Hbn.	C.	195.	minorata Tr.	P.	137.
corylata Thnbg.	E.	125.	multistrigaria Haw.	C.	109.
cuculata Hufn.	E.	118.	murinata Scop.	M.	151.
debiliata Hbn.	C.	196.	nanata Hbn.	E.	185.
decolorata Hbn.			nebulata Scop.	E.	148.
see flavofasciata Thnbg.		135.	nigrofasciaria Goeze.		
denotata Hbn.	E.	173.	see derivata Schiff.		116.
derivata Schiff.	C.	116.			
didymata Linn.	C.	110.	obliterata Hufn.		
distinctaria H.-Sch.	E.	181.	see nebulata Scop.		148.
distinctata H.-Sch.	B.	207.	oblongata Thnbg.		
dodoneata Guen.	E.	190.	see centaureata Schiff.		164.
dolabraria Linn.	P.	224.	olivata Schiff.	C.	106.
			otregiata Metcalfe.	L.	114.
elinguaria Linn.	C.	226.			
erosaria Schiff.	D.	219.			
exanthemata Scop.	C.	211.			
exiguata Hbn.	E.	161.			
expallidata Dbldy.	E.	174.			
extensaria Frr.	E.	184.			







# Aberrational Forms

## Geometridae Vol. 2

### Index to Species (contd.).

palustraria Dbldy.	E.	163.	tripunctaria H.-Sch.	E.	163.
pectinataria Knoch.	C.	107.	tresignaria H.-Sch.	E.	166.
pennaria Linn.	C.	227.	tristata Linn.	E.	128.
pictaria Curt.					
see distinctata H.-Sch.		207.			
picata Hbn.	E.	120.	ulmata F. see sylvata Scop.		204.
pimpinellata Hbn.	E.	183.	unangulata Haw.	E.	119.
pini Retz.	E.	157.	unifasciata Haw		
plumbeolata Haw.	E.	155.	see bifasciata Haw.		139.
procellata Schiff.	M.	127.			
prolongata Zell.					
see extensaria Frr.		184.	valerianata Hbn.	E.	156.
pulchellata Stephs.	E.	159.	venosata F.	E.	165.
pulveraria Linn.	A.	212.	virgaureata Dbldy.	E.	188.
pumilata Hbn.	G.	194.	viridaria F.		
pusaria Linn.	C.	210.	see pectinataria Knoch.		107.
pusillata Hbn.			vitalbata Schiff.	H.	200.
see tantillaria Bsd.		193.	vittata Bkh.	C.	105.
pygmaeata Hbn.			vulgata Haw.	E.	175.
see palustraria Dbldy.		163.			
quercinaria Hufn.	E.	216.			
rectangulata Linn.	C.	197.			
rivata Hbn.	E.	131.			
ruberata Frr.	H.	142.			
rubidata Schiff.	E.	123.			
sagittata F.	C.	117.			
salicata Hbn.	C.	108.			
satyrata Hbn.	E.	169.			
scabiosata Bkh.					
see subumbrata Schiff.		179.			
silaceata Schiff.	E.	124.			
sinuata Schiff.					
see cuculata Hufn.		118.			
sobrinata Hbn.	E.	187.			
sociata Bkh. see alternata Mull.		130.			
sordidata F. see furcata Thnbg.		140.			
sparsata Tr.	A.	198.			
strobilata Bkh. see pini Retz.		157.			
subciliata Dbldy.					
see inturbata Hbn.		153.			
subnotata Hbn.	E.	180.			
subumbrata Schiff.	E.	179.			
succenturiata Linn.	E.	178.			
suffumata Schiff.	L.	113.			
sylvata Scop.	A.	204.			
syringaria Linn.	A.	223.			
taeniata Stephs.	P.	132.			
taminata Schiff.					
see bimaculata F.		208.			
tantillaria Bsd.	E.	193.			
temerata Schiff.	B.	209.			
tenuiata Hbn.	E.	152.			
tersata Schiff.	H.	201.			
testaceata Don.	H.	146.			
tetralunaria Hufn.	S.	222.			
togata Hbn. see pini Retz.		157.			





ab. infumata Varnecke. Int. Ent. Z. 28 p. 132 f. 8 1934.

More or less strongly darkened with a brown suffusion, the markings remaining distinct.

ab. molarum Schultz. Wissensch. Beilage Jahresber. Freilig. Lage (Lippe). (1929/30). 1930, p. 22.  
White brownish, with all the markings much lighter. - Fig'd. Int. Ent. Z. 25, Schultz  
pl. 2, f. 33.

ab. microvittata Strand.

Undersized male, length of forewing 11mm.

ab. nigrofascia Rebel. Berge's Schmett. 1910 p. 347.

The black apical streak is continued as a black-grey nebulous stripe as far as the hindwing, the proximal line is absent but the subterminal line is distinct.

ab. fasciata Richardson. Ent. Rec. 64 p. 271 1952.

The antemedian and postmedian lines of the forewing strongly pronounced, the intervening area darkened in colour to form a pronounced median band across the wing.

ab. costovata Lempke. Tijdschr. Ent. 92 p. 185 1950.

The lower part of the central area of the forewing fails.

ab. bothnica Nessling Notul Ent. 18 p. 114

ab. interrupta Lempke. Tijdschr. Ent. 1967. 110. p. 277.

The narrow dark band on the forewings interrupted.

ab. centrilinea Lempke. Tijdschr. Ent. 1967. 110. p. 277.

On the upperside of the forewings the dark colour along the costa and between the antediscal line and the central shade fails completely.

ab. obsoleta Lempke. Tijdschr. Ent. 1967. 110. p. 277; pl. 13, f. 14.

With the exception of the central spot on the forewings, all markings obsolescent, or even for the greater part absent.

In referring to the markings in his English translation, Lempke says they are "obsolete"; in fact he means "obsolescent", as reference to his original Dutch description shows. This is an error that Lempke often makes.





olivata Schiff. aberrational forms etc.

ab. pallescens Cockayne. Entomologist 83 p. 51 pl. I f. 15 1950.

Forewing with the ground colour paler green than usual; the dark shading in the basal and median areas is absent; these areas are demarcated by very thin black lines; in the basal area there are no markings, and in the median area only one or two faint rippled lines; there is the usual white line external to the post-median, but between this and the termen there is no dark shading or wavy dark lines, the only marks being two or three black streaks. Hindwing pale grey.

ab. semisuffusa Cockerell. Entomologist 22 p. 55 1889.

The entire proximal area of the forewing dark suffused, confluent with the median band.

ab. desolivata Schawerda. Verh. zool.-bot. Ges. Wien. 64 p. 369 1914.

= nigricata Culot. Geom. III p. 170 pl. 25 f. 511 1917-1919.

Blackish without green scaling.





pectinataria Knoch.

= viridaria F. aberrational forms etc.

ab. rosea Wehrli.

All the green changed to yellowish-rose. Not the result of fading.

ab. haemataria Henriot ~~Mat.~~ Pap. I p. 244 1923.

The ground colour reddish-brown with the normally black markings deeper red-brown.

ab. harcynica Boldt. Lep. Rdsch. I p. 89 1927.

Ground colour white instead of green. Described from a bred specimen.

ab. albocincta Lempke. Tijdschr. Ent. 92 p. 186 1950.

The black border of the central area of the forewings only remains on the costa and inner margin, for the rest it is only bordered by a white line.

ab. approximata Lempke. Tijdschr. Ent. 92 p. 186 1950. (descript. vol. 90 p. 147)

The two transverse lines which border the central area of the forewings are close together.

ab. clausa Lempke. Tijdschr. Ent. 92 p. 186 1950. (descript. vol. 82 p. 197)

The first and second transverse lines of the forewing touch each other at the inner margin.

ab. costovata Lempke. Tijdschr. Ent. 92 p. 186 1950. (fig'd. vol. 110, pl. 15, f. 12.).

Of the central dark area of the forewings only the black spot on the costa remains.

ab. costijuncta Cockayne. Entomologist 83 p. 52 1950.

The first and second transverse lines of the forewing are united along the costa by a thick black bar.

ab. nigrolineata Cockayne. Entomologist 83 p. 52 pl. I f. 16 1950.

On the forewings the basal and median areas are bounded by distinct continuous black lines; the white line external to the postmedian is absent or very indistinct, the subterminal row of white dots is absent, and the subterminal shade is very faint.

gen. aest. aslae Agenjo. Eos IO p. 210 1934.

Much smaller than type, 7-9 mm. against 12-14 mm., lacking the beautiful green colour of the forewing.

ab. dalmani Burrau. Opusc. Ent. Lund. 15 p. 83

ab. constricta Prout. Seitz 4 p. 229 1914. (fig. Suppl. pl. 13 c.)

The median area much narrowed, so that it forms costally a single black mark, its posterior one-third white.

This description seems very close to ab. costijuncta Cockayne, but the figure in Seitz Suppl. does not agree with Prout's description.

ab. tangens Lempke. Tijdschr. Ent. 1967. 110. p. 329.

On the upperside of the forewings the ante- and postmedian lines touch each other a little above the inner margin and then separate again.

ab. divisa Lempke. Tijdschr. Ent. 1967. 110. p. 329.

Forewings with the central band divided into two parts a little above the inner margin.

It is not at all clear whether this division of the central band is vertical or horizontal; however, Lempke's preceding form was ab. tangens, so it may well be that this present form is a more extreme one of the tangens-character, but this is by no means certain.

ab. nigrolineata Lempke. Tijdschr. Ent. 1967. 110. p. 329; pl. 15, f. 11.

The central area of the forewings bordered on both sides by a thick black line.





salicata Hbn. aberrational forms.

latentaria Curtis. Brit. Lep. 1830 p. 31 pl. 296. Can be used for British race.

ab. nigrotaeniata Schawerda. Verh. zool.-bot. Ges. Wien 70 p. (96) 1920.  
The median band of the forewing entirely dark, well contrasted with the lighter areas which border it, the promarginal region also darker, a sprinkling of yellow scales in the basal and outer parts of the forewing.

ab. stenotaeniata Klimesch.

Dusky grey, the median band excessively narrow, partly marked with black, its posterior third lost in the dark ground colour.

ab. obscura Schawerda. Iris 52 p. 65 1938.

Forewings blackish darkened, without markings. Only a few tiny spots are present.





. multistrigaria Haworth. aberrational forms etc.

ab. pallida Lempke. Tijdschr. Ent. 92 p. 187. 1950.

Ground colour whitish, on the forewings only the transverse lines remain of the dark markings.

ab. nubilata Tutt. Brit. Moths 1896 p. 267.

Almost unicolorous fuscous forewings, hindwing also darkened.

ab. obscura Cockayne. Ent. Rec. 65 p. 163 1953.

Ground colour of both fore and hindwings uniformly smoky grey; the median band and subterminal are visible but obscured, other markings almost invisible. This form is not nearly so dark as the preceding ab. nubilata Tutt.

ab. virgata Tutt. Ent. Rec. 16 p. 303 1904.

Median band of forewing darker and more solid than in type.

ab. pseudocoarctata Hoffmeyer. Flora og Fauna 46 p. 92 fig.

ab. uniformata Lempke. Tijdschr. Ent. 1967. 110. p. 328; pl. 16, f. 5.

Forewings of a uniform grey colour, all the markings except the subterminal absent.

The figure shows traces of the normal basal band, as well as some markings in the marginal area.





didymata Linn. aberrational forms etc.

didymata

83

(subsp. *rebeli* Wnukowsky. Zool. Anz. 93 p. 223 1929. (nom. nov. pro *hetlandica* Rebel.)= *hetlandica* Rebel. Berge's Schmett. 1910 p. 344. (Homonym) not *hetlandica* Rebel.= *hetlandica* Culot. Geom. I p. 188 1917-1919.

The race from Shetland. Males more or less bright orange brown, females lighter ochreous brown or fawn colour.

Wnukowsky re-named Rebel's *hetlandica* as *rebeli*, pointing out that Fletcher & Culot's *hetlandica* is not the same as Rebel's *hetlandica* but Fletcher & Culot's *hetlandica* is not the same as Rebel's *hetlandica*.ab. *albidissima* Strand. Arch. Naturg. 85 A4 p. 28 1919.

Female, dirty white, the hindwing unicolorous, the forewing with the median area narrow, weakly indicated in grey-yellowish, its proximal boundary marked by a slender darker band.

ab. *lutescens* Prout. Seitz 4 Suppl. p. 134 1938.

Females of a warm ochreous-brownish colour.

ab. *flavescens* Lempke. Tijdschr. Ent. 92 p. 188 1950.Female with the ground colour pale yellow, the markings normal. Not identical with ab. *lutescens* Prout which has the ground colour darker yellow-brown.ab. *brunnescens* Lempke. Tijdschr. Ent. 92 p. 188 1950.

The dark markings of the wings brown. Male form.

ab. *contrastata* Lempke. Tijdschr. Ent. 92 p. 188 1950.

Ground colour of the wings pure white, the markings dark brown (without yellow tint) strongly contrasting. Female form.

ab. *brockenensis* Strand. Arch. Naturg. 85 A4 p. 28 1919

Male with the markings much greyer, grey black to pure black, without the usual brown tone, at least in the marginal area with a bluish tinge.

ab. *fremonti* Rondou.

Larger and much darker than type, the "twin" and subapical spots black, the subterminal strongly white throughout; the dark border of the hindwing not separated from the lighter part by any visibly darker line. Presumably a male form.

ab. *nigra* Prout. Entomologist 37 p. 152 1904.= *atra* Rebel. Berge's Schmett. 1910 p. 344.

Both wings uniform blackish-brown. Probably only found in males.

ab. *attenuata* Culot. Geom. I p. 189 pl. 27 f. 558 1917-1919.

Female, bone white, the markings reduced to some vestiges on the forewing, hindwing without markings.

ab. *planicolor* Lempke. Tijdschr. Ent. 92 p. 188 1950. (descript. vol. 90 p. 147)

The central area of the forewings of a unicolorously dark tint, normally it is paler.

ab. *koehni* Warnecke. Ent. Z. 50 p. 420 1936. pl. on p. 443 fig. I Row 5.

Most striking because of the strongly darkened basal and middle band.

ab. *nigrofasciata* Rebel. Berge's Schmett. 1910 p. 344.

Ground colour darkened, the median band narrow and almost black.

ab. *trifasciata* Warnecke. Ent. Z. 50 p. 442 pl. on p. 443 f. I. 1937.

Middle band absent or present only as a small fragment, so that the wing is divided into three areas, the basal and distal dark and the central light.

ab. *interrupta* Warnecke. Ent. Z. 50 p. 442 pl. on p. 443 fig. 4 Row 2. 1937.

Middle band split in the middle leaving an anterior and posterior part.

ab. *cuneigera* Balfour. Trans. Ent. Soc. Lond. lxxvi 1917.

With a conspicuous dark fuscous arrow-head marking, formed by a wedge-like extension of the twin-spots towards the base.



caesiata Schiff. aberrational forms etc.  
 infrequentata Haworth. Lon. Brit. 1809 n. 330.

ab. clarior Osthelder. Mitt. munchen ent. Ges. 19 (Schmett. Sudbayera p. 442 pl. 18) 1929.  
 The figure shows the ground colour distinctly whitish.

ab. divisa Lange. Iris 35 p. 164 Figs. 12, 16, 17. 1921.

= mediodivisa Stauder. Ent. Anz. 2 p. 93

The median band white in the centre, bounded narrowly by black on either side.

ab. conspicua Prout. Ent. Rec. 19 p. 22 1907.

= gelata Staudinger.

Is white or whitish, unmarked except for the basal and median black-brown bands which stand out in the boldest relief.

ab. hauderi Stauder.

= insignata Schawerda.

Median band solidly dark, much narrowed, proximal and distal areas whitish grey.

ab. paradoxa Lange. Iris 35 p. 165 1921.

Most striking form. Forewing smoky black only the basal patch and narrow median band whitish-grey; hindwing with proximal half white-grey, distal half blackish.

ab. lacteofasciata Lange. Iris 35 p. 163 1921.

Similar to the preceding paradoxa with white-grey basal and median areas but the rest of wing not so extreme, being not black but rippled with light lines.

ab. constricta Prout. Trans. City Lond. Ent. Nat. Hist. Soc. 17 p. 27 1908.

Median band much narrowed and interrupted towards inner margin.

ab. annosata Zett. Ins. Lapp. 1839 p. 962.

= nigristriaria Gregson. Entomologist 5 p. 75 1870.

The median band darker and not enclosing any light patch.

nigristriaria is possibly the same form; The median band deep blackish-brown, darker than the rest of the wing.

ab. nigricans Prout. Trans. City Lond. Ent. Nat. Hist. Soc. 17 p. 27 1908.

Glossy black or fuscous, the median band still darker but the lines which bound the areas remain pale.

ab. epixantha Stichol.

Forewing more brownish, hindwing darkened proximally, pale distally, the two shades rather distinctly defined.

ab. effusa Foltin. Z. Wien Ent. Ges. 27 p. 36 1942.

The middle band of the forewings not outwardly bounded but merged or suffused outwards.

ab. atrata Lange. Iris 35 p. 165 pl. I figs. 15 & 18 1921.

Black or fuscous with all the pale markings obsolescent, except the subterminal, in which respect it differs from nigricans Prout.

subsp. hethlandicaria Bang-Haas. Iris 24 p. 46 1910.

The Shetland race which generally speaking is darker.





flavicinctata Hbn. aberrational forms etc.

ab. grossi Hoffmann & Kloss.

The normally grey markings of the forewing yellow.

ab. hilariata Schwingenschuss.

The forewing, except the less strongly suffused basal and median areas, wholly suffused with gold-yellow. Possibly the same form as the preceding.

ab. flavopriva Schawerda. Mitt. munchen Ent. Ges. I4 p. 108 1924.

= flavoprivata Bang-Haas.

Very dark, with blackish median area, the yellow scaling scarcely at all visible without a lens.

ab. subcaeruleata Rondou.

The yellow scaling entirely wanting. This is merely an extreme form of the preceding flavopriva.

ab. divisa Osthelder. Mitt. munchen Ent. Ges. I9 (Schmett. Sudbayern p. 443) 1929.

The median band bisected by a pale central stripe.

ab. klemensiewiczii Pruffer. Bull. Intern. Acad. Polon. Sci. B. 1922 p. 282 fig. 1923.

Median band of the forewing black brown standing out sharply from the ground colour.; hindwing darkened especially towards the distal margin.

subsp. ruficinctata Guenee. Lep. Het. 2 p. 544 1858.

= obscurata Stgr. Cat. Ed. 3 p. 299 1901.

The race from Scotland. Both wings much darker grey, the median band of the forewing in consequence not very distinctly differentiated from the rest of the wing. obscura may be used as an aberrational name for the darker specimens.

ab. pseudocyanata Rebel. described as a form of flavicincta belongs to the species cyanata Hbn.





suffumata Schiff. aberrational forms etc.

ab. decolorata Nordstrom. Ent. Tidskr. 47 p. 164 1927.

Washed out appearance, the central band being more or less dissolved into lines and not standing out in contrast.

ab. piceata Stephens. Ill. Haust. 3 p. 234 1831.

Almost unicolorous fuscous. This is a prevalent form in some parts of N. England and Scotland.

ab. porrittii Robson & Gardner. List, Brit. Young Nat. 7 p. 45 1886.

= carringtoni Rebel. Berge's Schmett. 1910 p. 345.

Ground colour uniformly pale yellowish or white, the basal and median bands darkened and all the other markings obsolete except a subapical mark or streak.

ab. divisa Nordstrom. Ent. Tidskr. 47 p. 164 1927.

A moderate or broad grey-white or light brown-grey band centrally bisecting the dark median area.

ab. edentata Cockayne. Ent. Rec. 65 p. 163 pl. 12 f. 12 1953.

On the forewing the postmedian line is much smoother in its curves than usual the large double toothed projection is much less prominent and the teeth are absent, the indentation just above it is also absent or nearly so. The ground colour is dark and the white transverse stripes bordering the basal and median areas are very conspicuous.

ab. paradoxa Cockayne. Ent. Rec. 58 p. 93 pl. 2 f. 9 1946.

On the forewing the proximal part of the basal area, the space between the basal area and the antemedian line, and that external to the postmedian are deep fuscous, the rest of the wing is pale reddish brown; this pale area is in place of the normal dark median band. Hindwing is dark brown with a broad fuscous border. The pale median area with its conspicuous discoidal spot gives it a very distinct appearance.



otregiata Metcalfe. aberrational form etc.

ab. janssoni Nordstrom.

More uniformly dark brown, with only the white lines which bound the areas, and parts of the subterminal, standing out distinctly.





ab. *griseus* Vehrli.

Ground colour pure ash-grey, without the brown admixture; even the bands, which are darker grey, have the brown tone reduced. Markings very sharp.

ab. *griseata* (Oberth) Culot. Geom. III p. 259 pl. 37 f. 759 1917-19.

Similar to the preceding *griseus* but more extreme, the grey darker, the antemedian band slender.

ab. *carolinaria* (Oberth.) Culot. Geom. III. p. 259 pl. 37 f. 760 1917-19.

Brownish, the median area fuscous, extremely narrowed, the postmedian line being placed very near the antemedian, neither of them quite reaching the costa, the outward prongs of the former wanting.

ab. *interrupta* Metschl. Int. Ent. Z. 1925. 19. p. 26.

= *interrupta* Dannehl. Ent. Z. 1927. 41. p. 27.

On the forewing the normal grey central band, which usually is uninterrupted from costa to inner margin, is broadly interrupted, resulting in only two small spots remaining, of which one is on the inner margin and the other, enclosing the black discoidal spot, is on the costa.

Lempke, in Tijdschr. Ent. 110, p. 334, sinks his own ab. *tangens* as a synonym of this form, but the two are distinct.

ab. *constricta* Vorbrodt. Mitt. Schweiz. Ent. Ges. 1917. 12. p. 480.

The transverse stripes bordering the central area united below the middle; the grey ground colour of the central area is in the form of an oval in the upper half of the wing, and in the form of two roundish spots in the lower half.

This a more extreme development of the preceding ab. *interrupta* Metschl.

ab. *tangens* Lempke. Tijdschr. Ent. (1949) 1950. 92. p. 190. (descript. vol. 90, p. 147.).

The two transverse lines bordering the pale central area of the forewings touch each other below the middle, and then separate again.

Although Lempke makes this a synonym of ab. *interrupta* Metschl, this is incorrect, since in the *tangens*-type of variation, there is not a broad interruption of the central band. See also remarks under ab. *interrupta* Metschl above.

ab. *sineliturata* Culot. Geom. III p. 259 pl. 37 f. 761 1917-1919.

Similar to the preceding *interrupta* Metschl, with the whitish median band divided into an upper and lower part, but with the apical streak completely absent.

ab. *hellweger* Rebel. Berge's Schmett. 1910 p. 360.

Forewings with unicolorous black-brown middle area.

ab. *schultzei* Hoider. Soc. Ent. 19 p. 177 1905.

Ground colour of the forewings unicolorous brown, the median area not paler. Hindwing also darkened.

ab. *elutata* Favre.

Faded out appearance, the median area represented by two lines which meet at the costa, the postmedian then describing a circle, a sinus and finally some undulations. Prout remarks that he has seen nothing like it.

ab. *semifasciata* Prout. Seitz 4 p. 243 1914. (Parrett pl. 344 f. 2.)

The median area of the forewing much narrowed and in its costal part contains a narrow dark band, which posteriorly becomes reduced to a mere line.

ab. *deleta* Cockayne. Ent. Rec. 65 p. 163 1953.

The basal line is present, but the thin line internal to and parallel with it is absent; the antemedian and postmedian lines are present, but the lines in the median area parallel with them are absent; thus there are three single lines instead of three pairs.

ab. *costa juncta* Schwingenschuss. Z. Wien Ent. Ges. 39 p. 218 1954.

The inner and outer strong transverse lines of the forewing are connected by a dark brown bar, 6 mm. long and 1 mm. broad, along the costa.



derivata Schiff.

=nigrofasciaria Goeze. Aberrational forms etc.

ab. clara Lempke. Tijdschr. Ent. 92 p. 191 1950.

Central area of the forewings whitish.

ab. ludovicata Milliere. Ann. Soc. Ent. Fr. 7 p. 218 pl. 5 f. 14 1887.

Almost the entire median area of the forewing darkened so as to form a central band.

ab. nigrofasciata Cockayne. Ent. Rec. 65 p. 163 1953.

A broad dark band or bar running longitudinally from the antemedian to the postmedian line, occupying the costal half of the median area, and another much thinner band or bar running along the inner margin. The veins between these two bars are well outlined.

This form would seem to be transitional to ab. ludovicata Mill.

ab. costijuncta Cockayne. Ent. Rec. 65 p. 163 1953.

The antemedian line is united by a broad dark bar along the costa with the dark mark, which forms the upper part of the postmedian line.

ab. insignis Sheljuzhko. Mitt. munchen Ent. Ges. 44-45 p. 290 pl. 5 f. 6 1954-55.

The middle field with inner blackish stripe markedly broadened especially at costal margin, also the outer transverse line, normally scarcely indicated, is distinct although fine and likewise broadened at the costal margin so that the two lines nearly meet. This outer transverse line runs from the tooth-like projection on the costa to the inner margin and is accompanied by a second which runs parallel with it. The lower part of the middle field between the two transverse lines is brownish but the upper part, above median vein, is not dark but whitish looking like a large white spot and occupying the whole upper part of the middle field.

The main features shown on the figure are the double outer transverse line and the large whitish triangle in the costal half of the median area.





sagittata F. aberrational forms etc.

ab. approximata Lempke. Tijdschr. Ent. 92 p. 191 1950. (descript. vol. 90 p. 147.)  
The two transverse lines which border the central area of the forewings are close together.

ab. interrupta Hirsche. Verh. zool.-bot. Ges. Wien. 60 p. 417 1910.  
The median band interrupted with white in its middle.

c-

h-

r-



cuculata Hufn.

= sinuata Schiff. aberrational forms etc.

ab. anerythreia Rebel. Verh. zool.-bot. Ges. Wien. 73 p. (5) 1924.

The usual admixture of reddish on the forewing, both in the basal and distal area, is entirely absent.

ab. <sup>r</sup>ci~~n~~gulata Rebel. Berge's Schmett. 1910 p. 352.

The dark bands of the forewing are connected both at the costa and median vein, thus enclosing a roundish white patch.

C-

sh-

lr-





unangulata Haworth. aberrational forms etc.

ab. orbiculata Dannehl. Ent. Z. 47 p. 106 1933.

The cell spot of the forewing set in a light blue-grey space inside the median transverse band.

ab. euscopus Schultz. Int. Ent. Z. 24 p. 169 1930.

The median area, except its narrow boundary lines, particularly light, almost whitish. Other dark parts much lighter brown.

ab. deangulata Orstadius. Ent. Tidskr. 50 p. 258

The outer edge of the median band running in an even S curve, without the tooth at the third radial.

ab. triangulata Wagner. *Int. Ent. Z. 1919. 13. p. 159 pl. 1. f. 9*

The median band narrowed and broadly interrupted, forming a small costal patch and an inner-marginal triangle.

ab. angustifasciata Prout. Seitz 4 p. 247 1914.

The median band very much narrowed, scarcely, if at all, extending beyond the disc-ocellars.

ab. effusa Cockayne. Ent. Rec. 65 p. 169 pl. 12 f. 20 1953.

Median band unusually narrow; the parts normally white are cream coloured; the subterminal line is very dark and ill defined and on its inner side it encroaches on the light area outside the median band and runs inwards along the nervures; the faint dark transverse line just outside the median band is absent.



picata Hbn. aberrational forms etc.

ab. albofasciata Gauckler. Ent. Nachr. 26 p. 371 1900.

The lines and shading between the postmedian and subterminal obsolete, leaving an almost clear white band.

ab. lactecomarginata Raynor. Ent. Rec. 19 p. 239 1907.

The white postmedian band is of normal breadth but the entire area beyond is light creamy brownish, not olive green.





ab. approximata Lempke. Tijdschr. Ent. 92 p. 194 1950. (descript. vol. 90 p. 147)  
The two transverse bands which border the central area of the forewing are close together. Fig'd. vol. 110, pl. 16, f. 8.

ab. separata Romaniszyn. Motyli. Polski I p. 430 1929. (Polsk. Pismo Ent. 8 p. 221)  
A prominent, distinct, uninterrupted, sinuous black line bisecting the white band.

ab. denigrata Gillmer. Soc. Ent. 24 p. 42. 1909.  
Postmedian band infuscated, subterminal inconspicuous, otherwise almost wholly black.

ab. atrolata Schawerda.

Subterminal line almost entirely obsolete, median and distal bands strongly blackened, proximal area of a darker grey than in type.  
Possibly the same as the ~~case~~ following

ab. dobayi Dioszeghy. Verh. Siebenburg Ver. Naturw. 79-80 p. 256  
Subterminal line obsolete, white band of forewing rather less bent than usual, that of hindwing rather narrow, sharply defined proximally.

ab. indistincta Osthelder. Mitt. munchen Ent. Ges. 19 (Jch. Sudbayern 1929 p. 452)  
= effusa Muller.  
Outer white band blurred, without sharp dividing line or sharply defined boundary.

ab. interrupta Klemensiewicz.  
The middle band of the forewing interrupted with white.

ab. basinigra Klemensiewicz. Spraw. Kom. Fizyogr. 1913. 47. p. 122.  
The central area of the forewings black; the basal area of the hindwings black-grey. Description from Lempke, Tijdschr. Ent. 110, p. 336; original not seen.

ab. effusa-radiata Galvagni. Z. ost. Ent. Ver. 19 p. 49 pl. IX f. I 1934.  
Forewings with base like tristata L., a narrow blackish line in a white ground, then a second blackish band, neither sharply defined, inwardly and outwardly bordered by the pure white basal field. In the blackish middle band the black middle spot has a white centre and at the inner margin near fold another white spot. The bordering pure white band outwardly not defined, the black points radiating into the marginal field which is not so dark and pure black, interrupted in the middle by white, the white undulate line before the margin is distinct and entire as in tristata L. Hindwings suffused at base, the marginal field interrupted in the middle by white as in the forewings, the undulate line not very distinct but now dotted, except at inner margin.  
The figure shows the white of the postmedian band radiating into the marginal area especially in its middle and white bands at the base of the wings, normally not present.

ab. integrata Zetterstedt. Ins. Lapponica 1839. p. 967.  
Forewings with very broad white postmedian band; hindwings with a similarly broad postmedian white band.

ab. griseofasciata Lempke. Tijdschr. Ent. 1967. 110. p. 336; pl. 16, f. 10.  
Central area of the forewings pale grey, intersected by black nervures and bordered by black lines.

ab. defasciata Lempke. Tijdschr. Ent. 1967. 110. p. 336; pl. 16, f. 12 & 13.  
With the exception of a few little dots, the whole dark central band of the forewings has disappeared.

ab. brunnescens Lempke. Tijdschr. Ent. 1967. 110. p. 336.  
Ground colour of the dark parts of fore- and hindwings not black-grey, but brown-grey.



Geom.121.  
p.2.

*E. luctuata* Schiff., aberrational forms, etc. (cont'd.).

ab.albibasa Lampke. Tijdschr.Ent.1967.110.p.336; pl.16,f.14.  
Base of the hindwings white.





## bilineata L. aberrational forms etc.

ab. infuscata Guppenborg. Syst. Geom. Con. Pomp. Scot. 1888; 3; p. 288.  
Nova Acta Acad. Leop.-Carol. 54 p. 288 1890.

The median area of the forewings more or less filled with fuscous.

ab. stygiata Kautz. Mitt. munchen. Ent. Ges. 12 p. 16 1922.

Forewing much more strongly darkened than in the preceding infuscata Grp., especially the distal part.

ab. bubaceki Kautz. Mitt. munchen Ent. Ges. 12 p. 16 1922.

Striking on account of the development of an uninterrupted, pure white transverse stripe, broader or narrower, in the median area of the forewing. The aberration can be combined with the infuscata development.

ab. margaritata Kautz. Verh. zool.-bot. Ges. Wien. 72 p. (77) 1923.

The central part of the median area broken, by partial confluence of its two boundary lines, into circles which are likened to a chain of pearls.

ab. virgata Hawkins. Entomologist 58 p. 59 fig. 1925.

The median band almost solidly dark, only interrupted by a pale central stripe, and standing out in strong contrast to the rest of the wing, other lines almost obsolete.

ab. phaeotaeniata Kautz. Mitt. munchen Ent. Ges. 12 p. 16 1922.

The middle field of the forewings between the second and third transverse white lines, filled up with deep brown.

Similar to the preceding but with a deeper brown central band and other lines normal.

ab. fasciata Lempke. Tijdschr. Ent. 92 p. 196 1950.

Basal and central area of the forewings yellow-brown, the rest of wings normal. Also similar to the two preceding forms but with less contrasting band.

ab. testaceolata Staudinger. Cat. Ed. 2 n. 191 1871.

Forewing together with inner margin of hindwing, testaceous instead of yellow. Racial in parts of Europe but occurs elsewhere as an aberration.

ab. flavobrunnea Lempke. Tijdschr. Ent. 92 p. 196 1950.

Ground colour of fore and hindwings beautifully warm yellow-brown.

ab. bicolor Lempke. Tijdschr. Ent. 92 p. 196 1950.

Forewings pale yellow with brown-grey tint, hindwings normal.

ab. dumetata Schrank. Fauna Boica 2 (2) p. 33 1802.

Paler leather-yellow on both fore and hindwings. Racial in parts.

ab. unidentaroides Strand. Arch. Naturg. (1919) 1920. 85. 44. p. 32.

The smaller teeth of the postmedian line reduced, only a strong, scarcely bifid central prong remaining, median area somewhat darkened.

ab. illineata Prout. Seitz 4 p. 248 1914. = uniformis Kautz. Verh. z.-b. Ges. Wien. 72 p. (77) 1923.  
Entirely lacks the transverse lines, being uniform yellow or with the median area feebly darkened.

ab. subillineata Strand. Arch. Naturg. (1919) 1920. 85. 44. p. 31.

Transitional to illineata Prout. The principal lines, sub-basal, antemedian and postmedian of the forewing remain white, but the other markings, except a slight brownish shade at outer edge of median area, are obsolete. Hindwing with postmedian only remaining white, other markings obsolete.

ab. prillingeri Kautz.

The white postmedian of the forewing almost without teeth, with sharp black-brown shade proximally, the two lines which bound the central stripe of the median area widely separated, 3 mm. apart, the boundary lines of that area near them, the sub-basal and subterminal wanting; distal area of both wings unicolorous; hindwing with four distinct lines.



ab. cuneata Osthelder. Mitt. munchen Ent. Ges. I9 (Sch. Sudbayern P. 462) I929  
The subterminal accompanied proximally by strong black-brown wedge marks.

ab. fuscifasciata Meves. Ent. Tidskr. 1914. 35. p. 135-6.

Female. The whole of the median area and part of the outer intermediate area yellowish black-brown, except only the costal margin as far as the 5th. subcostal and a quite narrow light yellow stripe in the middle of the median area and almost interrupted between the 2nd. submedian and 1st. median. The dark brown cover the usually white lines on each side of the median area, so that they are only visible at the costa. (From the German description on p. 140.)

ab. insignata Kautz. Mitt. munchen Ent. Ges. I2 p. I6 I922.

Unmarked except for the white lines, three on the forewing, one on the hindwing, even the subterminal only weakly white.

Probably the same as subillineata Strand.

ab. brunneata Kautz. Mitt. munchen Ent. Ges. I2 p. I6 I922.

Forewings brown, hindwings yellow-brown, markings normal.

ab. coffeata Kautz. Mitt. munchen Ent. Ges. I2 p. I6 I922.

Both wings chocolate brown, markings normal.

ab. anaemica Kautz. Mitt. munchen Ent. Ges. I2 p. I6 I922.

Strikingly pale, the forewings light grey-yellow, the hindwings pale yellow, markings normal. ~~ab. insignata Kautz.~~

ab. mixta Lempke. Tijdschr. Ent. 92 p. I96 I950.

The forewings warm yellow-brown, the hindwings typically yellowish.

ab. ethelae Huggins. Entomologist 89 p. I pl. I f. 2 I956.

Uniform brownish-black as in isolata Kane, but the central band of the forewing is defined by three clear white thread-like lines, separating it from the basal blotch and another at its apical termination. There are two further imperfect white lines between this and the cilia, and two on the hindwing.

subsp. atlantica Staudinger. Iris 5 p. 247 I892.

Smaller than type, duller, darker yellow, the transverse lines more fuscous, the median area about as in ab. infuscata Gump., its central band frequently white or whitish. The subspecies from Shetland and Outer Hebrides.

subsp. isolata Kane. Entomologist 31 p. 85 I898. *fig. vol. 34 pl. 4. f. 12.*

Both wings blackish fuscous. Only known from Tearaght Island off Co. Kerry.

*Tvt. Ent. Rec. 1902: 14: p. 203*  
ab. hibernica ~~Prout. Seitz. 4 p. 249 I914.~~ (nom. nov. pro infuscata Kane.)

= infuscata Kane. (nom. preoc. Gump.) Entomologist 31 p. 85 I898. *fig. vol. 34 pl. 4. f. 13*  
Forewing almost unicolorous fuscous brown, hindwing ochreous brown. Western Ireland  
This form is not nearly so dark as the preceding isolata Kane.

ab. brunnea-infuscata Silbernagel. Acta Soc. Ent. bohem. 40 p. 5 I943.

ab. slabyi Komarek. Acta. Soc. Ent. Csl. 47 p. 44

ab. paeanagliensis Loritz. Bull. Soc. Ent. Mulhouse I952 p. 9.





rubidata Schiff. aberrational forms etc.

ab. derufata Lempke. Tijdschr. Ent. 92 p. I93 I950.  
The red tint of the forewings replaced by grayish.

ab. albescens Lempke. tijdschr. Ent. 92 p. I93 I950.  
The lower half of the central area of the forewings and the adjoining part of the subterminal area white.

ab. tangens Lempke. Tijdschr. Ent. 92 p. I93 I950. (descript. vol. 90 n. I47.)  
The two transverse lines which border the central area of the forewings touch each other below the middle and then separate again.

ab. margaritata Lempke. Tijdschr. Ent. 92 p. I93 I950. (descript. vol. 90 n. I47)  
The two transverse lines which border the central area of the forewings, touch each other on more than one spot.

ab. coarctata Cockayne. Ent. Rec. 65 p. I64 pl. I2 f. I7 I953.  
The median area is about half the normal width and is bounded externally by a complete black line from costa to inner margin.

ab. medioalba Silbernagel. Acta Soc. Ent. bohém. 40 p. 5 I943.



silaceata Schiff. aberrational forms etc.

ab. insulata Haworth. Lep. Brit. 1809 p. 330.

The median veins of the forewing are white right across the median dark band, cutting it into two parts.

ab. boegli Strand.

= wehrlii Niepelt. Jahresb. Ver. Ins. Breslau 13 p. 42

= diluta Metschl. Int. Ent. Z. 19 p. 27 1925.

The dark median band of the forewing is reduced to a small costal spot and an inner-marginal spot, the rest being cream-yellow with faint lines.

ab. effusa Muller. Z. Ost. Ent. Ver. 15 p. 94 1930. pl. 12 f. 3.

The median band reduced to <sup>narrowed</sup> a, upper and lower blotch separated by a thin creamy line. The rest of the median band is <sup>suffused</sup> creamy, its external edge ~~admarginally~~ running into the dark outer area in creamy vein streaks

ab. melaleuca Cockayne. Ent. Rec. 65 p. 164 1953.

The ground colour is pure white instead of cream colour and the markings are intensely black.

ab. maculata Hoffmeyer &amp; Knudsen. Danske Storsommerfugle 1938 p. 236-310 fig.

ab. ruptata Nordstrom. Svenska Fjarilar (1935-41) 1940. pt. 11. p. 265; pl. 38, f. 12b.

The central area narrowed and divided into 2-3 well demarcated spots.

The figure shows the central dark band divided into a large costal and inner marginal portion, and a minute central portion, about the size of the discoidal spot.

ab. divisa Lempke. Tijdschr. Ent. 1967. 110. p. 314.

The central area of the forewings over its entire length is of a paler colour, whereas the borders remain dark.

Presumably this means that the central dark band is divided by a light stripe, although it could be argued that it is absent; the description is not really clear enough.

ab. nigrescens Lempke. Tijdschr. Ent. 1967. 110. p. 314.

The upperside of the forewings with the basal and central areas deep black and the normally pale parts strongly darkened, blackish. Hindwings darkened.





## corylata Thnbg. aberrational forms etc.

ab. unicolorata Heydemann. Ent. Z. 51 p. 393 fig. 1938.

The light parts of the forewings are almost completely replaced by chocolate-brown, almost unicolorous with the two dark areas.

ab. brunnescens Ljungdahl. Ent. Tidskr. 61 p. 49 1940.

Middle and basal areas unicolorous brown-yellow, also the light bands which border the median area are of the same colour.

Similar to the preceding but not so dark.

ab. effusa Nordstrom. Svenska Fjarilar 1940 p. 265 pl. 38 f. 13 C.

The dark middle and basal areas are not sharply defined.

ab. glaucata Moves. Ent. Tidskr. 1914. 35. p. 137.

The normally brown markings changed to light grey. (From German transl., p. 140.)

ab. albocrenata Curtis. Brit. Ent. 13 p. 603 1836-37.

= effusaria Staudinger. Cat. Ed. III p. 307 1901.

The median band more or less obsolete, only represented by some indistinct grey dusting. Often the light olive brown bands which precede and follow the median are much darkened but this is by no means always the case.

ab. ruptata Hubner. Samml. Eur. Schm. 1796-99 f. 295.

= interrupta Hirschke. Verh. zool.-bot. Ges. Wien. 60 p. 417 1910.

= interrupta Schawerda. Jahresber. Wien Ent. Ver. 24 p. 156 1914.

= defracta Strand.

The median band of the forewing interrupted with white at the fold.

ab. dissecta Kolossow. Ent. Nachr. 10 p. 149 1936.

The description says the middle band is "torn to pieces". It may or may not be a synonym of the preceding, the description is useless.

ab. albida Herz Ofv. Finska Forh. 45 No. 15 p. 17.

Was described as an aberration of corylata but was raised by Bang-Haas to specific rank.

ab. costimaculata Cockayne. Ent. Rec. 58 p. 94 1946.

Only the costal part of the median band of the forewings is present.

ab. costaelausa Lempke. Tijdschr. Ent. 92 p. 200 1950.

Basal and central band touch each other at the costa.

ab. degenerata Lempke. Tijdschr. Ent. 92 p. 200 1950.

Only two spots remain of the central band, on the costa and inner margin, thus widely separated from one another.

ab. albosparsata Lempke. Tijdschr. Ent. 1967. 110. p. 327.

Upperside of the forewings with the central area powdered with white and separated from the basal area by a white band, the outer area completely white and the subterminal line only dark-edged on the costa and inner margin.



## albicillata L. aberrational forms etc.

ab. lacticolor Lempke. Tijdschr. Ent. 92 p. 201 1950.  
Ground colour of the wings yellowish-white.

ab. suffusa Carrington. Entomologist 14 p. 73 fig. 1881.  
The entire forewings suffused with dark leaden-grey.

ab. impuncta Lempke. Tijdschr. Ent. 92 p. 201 1950. (descript. vol. 90 p. 147)  
The central spot of the forewings is absent.

ab. quadripuncta Lempke. Tijdschr. Ent. 92 p. 201 1950.  
Fore and hindwings on the upperside with a distinct central spot, not one showing through from the underside.

ab. reducta Lempke. Tijdschr. Ent. 92 p. 201 1950.  
The dark markings on the outer margin of fore and hindwings strongly reduced.

ab. philippsi Hannemann.  
The dark basal patch of the forewing broadly confluent along the costa with the subapical patch.

ab. vestata Dadd. Dtsch. Ent. 3. 1921 p. 94.  
The white median area of the forewing very narrow as a result of a broadening of the basal patch and the distal bluish part and with the normally fine dark postmedian line strong, double and nearly median.

ab. rectangulata Cockayne. Ent. Rec. 65 p. 164 pl. 12 f. 18 1953. 1  
The dark basal area is larger than normal and the dark subapical mark on the costa is rectangular and much longer than usual so that the white space between them is much reduced; the nervures from the postmedian row of dots, as far inward as the end of the subapical mark, are darkened, forming a row of short lines.

ab. venata Cockayne. Entomologist 83 p. 52 1950. (fig'd Barrett pl 339 f. 1a.)  
Ground colour deep cream tinged with ochreous. Forewing with basal and subapical markings dark brownish purple, the former considerably larger and the latter more elongated than usual, so that the pale median area at the costa is about half the usual width; the postmedian line, faint in the Type and distinct in the Paratype, is much nearer the base than in normal specimens, and the nervures running into it are brown, especially the subcostal and median and nervures 3, 4, 5 and 6; external to the postmedian line the band of interneural blue-grey shading is wider than usual in the Type, but of normal width in the Paratype; the marginal shading is very pale. Hindwing with a complete blue-grey submarginal band, but the marginal band is almost obsolete.





procellata Schiff. aberrational form etc.

ab.fulvomaculata Dannehl. Ent. Z. 47 p. 123 1933

Ground colour inclining to yellowish, the black-brown parts intense, the yellow-brown becoming fawn-brown between the posterior lines of the median area.

ab.infumata Rebel.

Forewing strongly suffused with brown, only the band before the middle remaining white.

7I pl. f. 12 1922.

ab.extrema Schwingenschuss. Z. Ost. Ent. Ver. 6 p. 2 1921 (fig. Verh. z.-b. Ges. Wien)

All the white parts of the wings considerably darkened, much more so than in the preceding infumata Reb., except for the square blotch on the margin of the forewing, which remains white.

ab.effusa Schneider. Ent. Rdsch. 51 p. 238 fig. p. 239 f. 2 1934.

The white parts of the wings fused into the black areas, with no sharp division

ab.inexpectata Warnecke (Prout) Seitz 4 Suppl. p. 157 1938.

The median area of the forewings with the wavy lines behind the large costal blotch wanting or obsolescent, so that the middle of the wing is particularly light. Racial in parts, Lempke has named this reducta when occurring as an ab.

ab.reducta Lempke. Tijdschr. Ent. 92 p. 202 1950.

The dark undulating lines which represent the lower part of the central band of the forewings, fail completely. See the preceding.

ab.signata Lempke. Tijdschr. Ent. 92 p. 202 1950.

All undulating lines in the central area are sharply marked as far as the inner<sup>1</sup>-margin.

ab.nigrapicata Cockayne. Entomologist 85 p. 269 pl. 4 f. 17-18 1952.

On the forewing the costal blotch and the marginal area are blackish; the intervening area is heavily dusted with black scales and there are also black scales along nervure 3; the usual square white spot on the margin is present.

ab.fasciata Hoffmann. Mitt. Nat. Ver. Steiermark 1917. 53. p. 179.

Forewings with a complete central fascia, so that the lower half is also darkened.

Description from Lempke in Tijdschr. Ent. 110, p. 334; we have not seen the original.

ab.brevipennis Lempke. Tijdschr. Ent. 1967. 110. p. 334.

Fore- and hindwings distinctly shortened.

This is from Lempke's original Dutch description; his English translation says: "Fore- and hindwings distinctly too short".





tristata L. aberrational forms etc.

ab. *kerteszi* Aigner. Ann. Mus. Nat. Hung. 4 p. 525 pl. I4 f. IO 1906.

The median band of the forewing almost entirely absent, only a dark spot on the discocellular remaining.

ab. *nigrata* Rebel. Berge's Schmett. 1910 p. 354.

The abdomen deep black, only showing narrow white edging to the segments dorsally

ab. *continuata* Fuchs. Jahrb. Nassau Ver. 54 p. 56 1901.

Paler grey-brown, both wings with continuous dentate subterminal line, fringes more broadly and regularly chequered with white.

ab. *brunnea* Nessler. Notul. Ent. 5 p. 98.

The normally dark parts of a light yellowish-brown, the white parts normal.

ab. *actinaria* Dannehl. Ent. Z. 41 p. 24 1927.

Washed out appearance, the dark markings indistinct and effused, the dots in the white bands only indicated by slender rays along the veins, in extreme developments wanting altogether.

ab. *interrupta* Heinrich. Deutsch. Ent. Z. 1918. p. 428.

= *interrupta* Lange. Iris. 35 p. 170 1921.

The median band of the forewings interrupted with white in the submedian region

ab. *divisa* Prout. Seitz 4 Suppl. p. 161 1938.

The median band of the forewing white-centred from costa to inner-margin.

ab. *hastatoides* Nitsche. Verh. zool.-bot. Ges. Wien. (1924-25) 1926. 74-75. p. (177).

The white postmedian band broadened and in the mid-subterminal white spot extended into a complete hastate mark, strongly recalls that of *hastata*.

ab. *luctuolata* Klemensiewicz. Spraw. Kom. Fizyogr. 1902. 36. p. 50.

Brownish black, the median band not marked with white, bounded by narrow white, black-dotted bands. According to Lempke [Tijdschr. v. Ent. 110. p. 296], the following form is a synonym of this.

→ = *pseudoluctuata* Vorbrodt. Mitt. Schweiz. Ent. Ges. (1911-17) 1917. 12. p. 477.

Much blacker than typical *tristata*, the forewing almost solidly black as far as the postmedian, the outer white band bisected by thick dots or a connected line of these dots, the subterminal vestigial.; the characteristic red-yellow terminal marks of *ab. limbosignata* Nolck are discernible. [see preceding form.]

ab. *limbosignata* Nolcken.

A series of rounded rust-brown terminal spots between the postmedian white band and the margin.

ab. *demarginata* Cockayne. Ent. Rec. 65 p. 164 pl. I2 f. I3 1953.

The dark markings on the border of the forewing are greatly reduced, only a faint trace of brown remaining and a little darkening of the nervures; the dark markings on the border of the hindwing are reduced but not to the same extent.

ab. *approximata* Lempke. Tijdschr. Ent. 1967. 110. p. 296.

Forewings with the central area strongly narrowed.

ab. *tangens* Lempke. Tijdschr. Ent. 1967. 110. p. 296.

Forewings with the central area so strongly narrowed that its margins touch each other a little above the inner margin.

ab. *bimaculata* Lempke. Tijdschr. Ent. 1967. 110. p. 297.

Forewings with the central band reduced to two spots, one on the inner margin, and the other in the centre.

This form is figured incorrectly as *ab. kerteszi* Aign. by Osthelder in Schmett. Sudbayerns, pl. 17, f. 10.

ab. *lactofasciata* Lempke. Tijdschr. Ent. 1967. 110. p. 297.

On the forewings the light bands are not white, but creamy or pale yellow.



galiata Schiff. aberrational forms etc.

ab. chalybeata Hubner. Samml. Eur. Schmett. I809-I3 fig. 350.

Median band broad, dark bluish slate colour, distal area weakly marked, with a tinge of brown.

ab. dissoluta Prout. Seitz 4 Suppl. p. I62 I938.

Ground colour white, the median band predominantly light blue-grey, only blackened at its extreme edges.

ab. omnia Schawerda Verh. zool.-bot. Ges. Wien. 62 p. (I43) I9I2.

Pure white ground colour, the median band blue-black, the brown tinge absent from both; the white distal area very weakly marked.

ab. quadriannulata Haworth. Lep. Brit. I809 p. 33I.

The pale sub-basal area broken up into four separate white, dark ringed spots.

ab. brunneata Kitt. Z. Ost. Ent. Ver. IO p. 28

= brunneescens Wagner.

Strong reddish-brown scaling in the distal area and, especially, in the basal area of the forewing.

ab. ochreatea Wagner. Z. Ost. Ent. Ver. II p. II3 I926.

An extreme development of brunneata Kitt, with the basal and distal areas of the forewing reddish ochre-brown, almost orange.

ab. unilobata Haworth. Lep. Brit. I809 p. 33I.

The distal area generally rather strongly shaded with grey, the median band broad and dark without any tinge of brown.





alternata Müller.

= sociata Borkh. aberrational forms etc.

subsp. obscurata South. Entomologist 21 p. 27 fig. 1888.

The ground colour less pure white, the dark markings of the forewing are dull grey-brown, the dividing-line of the white postmedian band is always as dark as (~~dark as~~) the rest of the markings. The median band of the forewing is much spotted with black. The race from the Hebrides.

ab. divisa Osthelder. Schmett. Sudbayerns. 1929. 1. (3). p. 450.

The median dark band completely divided by a paler stripe from costa to inner margin.

ab. tenuifasciata Schima. Verh. zool.-bot. Ges. Wien. 77 p. (78) 1927.

The median band much narrowed, (1 - 1.5 mm) but not actually interrupted.

ab. degenerata Haworth. Lep. Brit. 1809 p. 333.

= kurzi Hirschke. Verh. zool.-bot. Ges. Wien. 60 p. 415 1910.

The median band of the forewing broadly interrupted or broken with white.

ab. pseudorivata Wagner. Z. Ost. Ent. Ver. 8 p. 36 1923.

The dark dividing line of the postmedian white band more or less completely obsolete, the proximal part of the hindwing also less dark than usual, so that the whole appearance is more rivata-like, except as regards the distal area.

ab. eulampa Kautz. Verh. zool.-bot. Ges. Wien. (1922) 1923, 72, p. (98).

Light grey with violet reflections, the median band very broad, not darker, the white markings very narrow, but distinct.

ab. albinata Romaniszyn. Polsk. Pismo. Ent. 4 p. 198

Both wings very pale yellow instead of dark brown-grey.

ab. effusa Muller. Z. Ost. Ent. Ver. 15 p. 94 pl. 12 f. 4 1930.

The white postmedian band very broad, the boundary between it and the median band ill-defined.

ab. cingulata Tengström. Notiser p. Fauna et Flora Fenn 14 p. 32 1875.

The abdomen black, the hindwing also somewhat darkened.

ab. obscura Lempke. Tijdschr. Ent. 92 p. 204 (~~1949~~) (1949) 1950.

The white postmedian band narrow, and over its whole length divided by a black line, base of the hindwings darker.

ab. melanotica Horhammer. Ent. Z. 62 p. 38 1952.

All wings unicolorous brownish-black.

ab. confusa Cockayne. Ent. Rec. 65 p. 164 pl. 12 f. 10 1953.

Median band of the forewing narrow; the border is dark and suffused internally, fading away gradually into the white ground colour shortly before reaching the postmedian line; there is none of the normal reticulations and the dark line just external to and parallel with the postmedian line is absent. On the hindwing the basal part is dark as far out as the postmedian line and the marginal area is similar to that of the forewing. The form has a dark smoky suffused appearance.

ab. lacteata Larsen. Flora og Fauna 54 p. 59

ab. lactofasciata Lempke. Tijdschr. Ent. 1967. 110. p. 298.

On the forewings the pale bands are pale yellowish instead of white.

ab. nigrosignata Lempke. Tijdschr. Ent. 1967. 110. p. 298; pl. 14, f. 14.

Body unicolorous black. Forewings with the basal and central bands black, separated by a black-grey band, and the marginal area blackish with a sharp, white submarginal line. Hindwings blackish, with a white postdiscal band divided by a dark line, the submarginal line sharp and white.



Geom.130.  
p.2.

E. alternata Müll., aberrational forms, etc. (cont'd.).

ab.bicolor Lempke. Tijdschr. Ent. 1967.110.p.298.

Forewings with the basal and discal bands black-grey, all other markings pale grey, contrasting with the dark bands.



rivata Hbn. aberrational forms etc.

ab. maculata Rebel. Berge's Schmett. 1910 p. 352. (See Barrett pl. 337 f. 2 A.)  
The median band reduced greatly, broken up into a small costal spot, a wedge-shaped central mark and a somewhat larger inner-marginal spot.

ab. inexpectata Krulikowski. Mater. Faun. Flor. Ross. 9 p. 150  
Prout raises this form to the rank of species.

ab. approximata Lempke. Tijdschr. Ent. 92 p. 204 1950. (descript. vol. 90 p. 147)  
The two transverse lines which border the central area of the forewings are close together.

ab. effusa Lempke. Tijdschr. Ent. 92 p. 204 1950.  
The central band of the forewings not sharply bordered.

ab. pseudoalternata Lempke. Tijdschr. Ent. 92 p. 204 1950.  
The base of the hindwings as dark as in alternata Mull., the rest of the markings normal.

ab. divisa Lempke. Tijdschr. Ent. 92 p. 205 1950.  
The central band of the forewings over its whole length divided by a pale stripe

ab. nigrescens Lempke. Tijdschr. Ent. 1967. 110. p. 299; pl. 14, f. 11.  
Fore- and hindwings of a uniform blackish-grey; the darker central area of the forewings bordered by narrow pale bands. Hindwings with unsharp, somewhat paler discal band, and distinct discal point.  
Lempke says that after the specimen had been photographed, a genitalia slide was made of it, to make certain of its identity.





taeniata Steph. aberrational forms etc.

ab. latefasciata Strand. Arch. Naturv. Christian 25 No. 9 p. 17 1903.

Median band broader than usual, fully one third as broad as the length of the wing.

ab. angustifasciata Strand. Arch. Naturv. Christian 25 No. 9 p. 17 1903.

Median band narrow, only about one sixth as broad as the length of the wing.

ab. bronnoensis Strand.

Dark appearance, with whitish and greyish markings, the usual brownish or reddish tinge apparently wanting. The type of markings of the forewing somewhat recalls that of *coerulata* F.; the pale band beyond the middle extended at the expense of the median band.

Prout thinks that the rather worn condition of the insect may be in part responsible for its abnormal aspect.

ab. zinaidae Kollosoy. Ent. Nachr. 10 p. 149 1936.

The middle field of forewings dark.

Description does not seem sufficient since most specimens have a dark middle band and Kollosoy says it is very rare.

ab. defasciata Dioszeghy. Verh. Siebenburg Ver. Naturw. 1935 p. 120 vol. 83-84.



affinitata stonh. aberrational forms etc.

ab. rvinata Fischer von Roeslerstaam. Abb. Schmett. k 1838 n. 100  
 Broader white bands on the forewing, the hindwing lightened with whitish.  
 This is probably the name for a race and not really applicable to aberrations.

ab. indistincta Osthelder. Mitt. munch. Ent. Ges. 19. (Jen. Sudbayera p. 438 1927)  
 Unicolorous washed out dark markings and white antemedian band without markings.

Prout figures a specimen which he assumes represents this form but it does not agree with the description. See Seitz Suppl. 4 pl. 16 B.

ab. offusa Schneider. Ent. Z. 47 p. 18 fig. 2 1933.

= tenuivittata Nordstrom. Svenska Fjarilar 1940 p. 268 pl. 38 f. 25 D.

= offusa Cockayne. Ent. Rec. 65 p. 165 1953.

The dark border diffused into the outer part of the white postmedian band.

ab. jensischi Schneider. Ent. Z. 47 p. 18 fig. 1. 1933.

Forewing to just beyond middle white-grey strigulated with blackish, the rest of wing blackish with no postmedian white band.

ab. lineata Lempke. Tijdschr. Ent. 92 n. 206 1950.

Forewings with complete subterminal line, otherwise normal.

ab. unicolorae Gregson. Young Nat. 10 n. 257 1889.

= unicolorata Kane. Entomologist 30 p. 236 1897.

Forewings smoky with the band obsolete, hindwings also mostly darkened.

ab. maculata Lingonblad. Notul. Ent. 24 n. 74 1945.





## alchemillata L. aberrational forms etc.

ab.interrupta Boldt. Lep. Rdseh. I p.89 1927.

The white postmedian band interrupted by a projection of the ground colour in the centre.

ab.peterseni Prout. (nom. nov. pro fennica Peten. nec Reuter) Scitz. 4 p.260 1914.  
= fennica Peterson. (nom. preoc. Reuter 1893)

The white antemedian band well expressed, generally also the postmedian white band somewhat widened and sometimes even a complete sub-basal is present. The form is racial in some parts.

ab.fennica Reuter. Acta. Soc. Flora et Fauna Fenn. 9 (6) p.75 1893.

= indistincta Wehrli.

More unicolorous, less traversed by wavy lines, the antemedian white band obsolete, the postmedian undivided and not sharply bounded distally, its shape somewhat different, the terminal line in the ♀ almost obsolete.

ab.unicolorata Lange. Iris 35 p.171 pl. I f.25-26 1921.

The forewing almost uniformly dark, retaining only the commencement of the whitish subterminal line at the costa.

= infusata Nordström; reference unknown, but mentioned as a synonym of unicolorata by Nordström himself in Svenska Fjärilar (1940), on p 268, & fig'd. pl. 38, 226c

ab.mokrzeckii Pruffer. Polsk. Pismo. Ent. 6 p.119 fig.

Median area reddish black, the base lighter, uniform; no definite demarcation between the two; postmedian white band narrow with no dividing line; distal area uniform reddish-black, the subterminal not clearly defined.

ab.russata Gregson. Young Nat. 10 p.237 1889.

All the "higher" parts of the wings are reddish-brown.

This presumably means the costal half of the wings, the inverted commas are mine

ab.derasa Vessling. Notul. Ent. 18 p.114



flavofasciata Thnbg.

= decolorata Hbn. aberrational forms etc.

ab. interrupta Lempke. Tijdschr. Ent. 92 p. 210 1950.

The central band of the forewings in its lower half broken into two parts.

ab. divisa Lempke. Tijdschr. Ent. 92 p. 210 1950.

The central band of the forewings divided by a white line over its entire length from costa to inner margin.

ab. dissoluta Lempke. Tijdschr. Ent. 92 p. 210 1950.

The central band broken up into a number of lines.

ab. continua Lempke. Tijdschr. Ent. 92 p. 210 1950.

The white postmedian line of the forewings not interrupted by the brown-yellow ground colour.

ab. aequilimbata Lempke. Tijdschr. Ent. 92 p. 210 1950.

The outer area of the forewings unicolorous brown-yellow without the white sub-terminal line.



albulata Schiff. aberrational forms etc.

ab. griseata Staudinger. Cat. Ed. II p. 190 1871.

The greyish tone of the markings more pronounced and some admixture of fuscous. The ground colour remains white but the hindwing is greyish.

ab. mundata Klemensiewicz. Romaniszyn, Fauna Motyli Polski 1929 n. 450.

= tenuifasciata Nordstrom. Svenska Fjarilar 1941 p. 269 pl. 39 f. 1 B. Forewing with the median band much narrowed.

ab. reducta Lempke. Tijdschr. Ent. 92 p. 209 1950.

Only the two lines which border the central area of the forewings are present and clearly visible.

ab. hebudium Weir. Entomologist. 14 p. 221 fig. pl. 1 f. 17 1881.

= niveata Steph. nec. Scop.

= hebrideum Robson & Gardner.

Pure white without markings

<sup>?subsp.?</sup> ab. subfasciaria Boh. Acad. Hndl. Stokh. 1852 p. 133.

Yellowish-grey or brownish-grey, in general weakly marked. Occurs in Shetland.

ab. thules Weir. Entomologist 13 p. 290 pl. 4 f. 4-5 1880.

All wings considerably darkened, greyish-brown the markings hardly standing out.

ab. nidarosiensis Strand. Arch. Naturg. 85 A4 p. 26 1919.

Grey rather than white, the subterminal line less distinct, the postmedian sharply marked and angular, the antemedian band with sharply marked dividing line.

ab. zimmermanni Rebel. Verh. zool.-bot. Ges. Wien. 78 p. (25) 1928

The base and narrow median area of the forewing white, a broad almost perpendicular grey-brown band between, a broad distal area similarly uniform grey-brown, with no trace of the subterminal line. Hindwing in basal half white, in distal half unicolorous grey-brown.

ab. pronuntiata Dannehl. Ent. Z. 39 p. 16 1925.

Clean white, without any tinge of yellowish or brownish, the markings sharply expressed, but only as fine lines with no tendency to form bands.

ab. albomedia Cockayne. Ent. Rec. 65 p. 164 pl. 12 f. 7 1953.

The median area is white and entirely without markings; the basal and marginal markings are present.





minorata Tr. aberrational forms etc.

subsp. *ericetata* Stephens. Ill. Haust. 3 p. 298 1831.

The Scottish race, smaller, darker marked, the white band distally to the median generally with a sharper dividing line, the hindwing darker grey.

ab. *monticola* Strand. Nyt. Mag. Naturv. 1902 p. 40.

The median area not darkened at all, but only indicated by the lines which limit it. Occurs in the Scottish race.



blandiata Schiff. aberrational forms etc.

ab. costimaculata Wagner. Int. Ent. Z. 13 p. 160 fig. II 1919.

Only a small dark costal spot remains of the median band, the other markings weak.

ab. bipuncta Stach. Spraw. Kom. Fizyogr. Krakow. 56 p. 122 1922.

Both fore and hindwings almost without markings, unicolorous whitish; of the median band only a black dot remains.

ab. defasciata Sohn-Rethel. Iris 43 p. 18 1929.

A costal dot only representing the basal band, three slender anterior lines remaining of the median band.

ab. coarctata Prout. Seitz 4 p. 262 1914.

The median band narrowed to a mere thread.

ab. indistincta Osthelder.

Ground colour yellowish-brown, the median band entirely dark, unmarked, the rest of the markings washed out, subterminal indistinct.

subsp. perfasciata Prout. Seitz. 4 p. 262 1914.

The median band dark throughout. Appears to form a constant race in Hebridea.

*Prout apparently meant Skotland*



bifasciata Haworth. (corrected to bifasciata in Haworth Index  
= unifasciata Haworth. aberrational forms etc.

ab. planior Lempke. Tijdschr. Ent. 92 p. 208 1950.

The broad pale postdiscal line has a brownish colour, so that the wings become much less mottled.

ab. nigrofasciata Lempke. Tijdschr. Ent. 92 p. 208 1950.

Central band of the forewings black instead of dark brown.

ab. unicolor Lempke. Tijdschr. Ent. 92 p. 208 1950.

All pale markings fail so that the forewings are almost unicolorous black-grey.

ab. approximata Lempke. Tijdschr. Ent. 92 p. 208 1950. (descript. vol. 90 p. 147)

The two transverse lines which border the central area of the forewing, are close together.





the wing; the median area extending from the antemedian line internally to the outer aspect of the subterminal band, which is close to the anal angle, and from the inner margin to nervure three is uniformly dull brownish-grey; from the proximal end of this an oblique band of the same colour runs to the costa. These bands, and the median area together with the costa enclose an irregular area of the ground colour in the proximal part of which lie six dark spots speckled with whitish and at the distal end is a narrow doubly angulated band first running towards the termen, then away from it, and then towards it again, parallel with the inner aspect of the subterminal band. The border of the termen is dark and in the narrow belt of ground colour between it and the subterminal band are a number of small dark spots. The pattern is unlike that of any other aberration of this species.

ab. *supercincta* Cockayne. Ent. Rec. 65 p. I65 I953.

Ground colour dull pale greenish white; the basal area dark and unusually broad; there is a very broad dark median band; the subterminal line is absent; outside the median area there is a broad band of pale ground colour, the terminal band is dark.

ab. *prouti* Cockayne. Ent. Rec. 65 p. I66 pl. I2 f. I6 I953.

Ground colour whitish faintly tinged with greenish-brown; there are three equidistant indistinct narrow transverse bands pale greenish-brown in colour; at the extreme base is a thin black transverse line; a thin black transverse line, slightly curved with the concavity towards the termen, runs from the subcostal nervure to the median nervure and another thin black line runs obliquely from a point near the costa to the subcostal nervure and then in a curve, with the concavity towards the base, to the median nervure; the second faint transverse band runs just internal to the one, and the third transverse band runs just external to the other; there is also an indistinct narrow band of brownish-green along the termen; the fringe is chequered. The hindwing is dull greyish-brown and is darker than the forewing.

ab. *nigra* Hackray. *Lambillionea* 38 p. 201 I938. = *nigra* Van Wisselingh. Ent. Rev. 1957: 17: 126  
Forewings entirely black, markings totally obliterated or only very slightly apparent. Hindwings likewise darkened.

ab. *multilineata* Nordstrom. Svenska Fjarilar (I935-41) 1940. pt. 11. p. 270; pl. 39, f. 3f  
Unicolorous brown, with the markings demarcated by 9-10 white or whitish narrow lines.

The figure agrees with the description, except that, in addition to these white lines, the usual white spot situated in the outer area of the forewings is extended downwards almost to the inner margin, and upwards to about  $\frac{2}{3}$  up the wing.

ab. *approxinata* Lempke. Tijdschr. Ent. 1967. 110. p. 331.

Forewings with the central area strongly narrowed.



ab. stragulata Schrl. Verh. Ges. Basel 28 n. 244 1917.

The light whitish median area cut by black horizontally so as to form isolated, black-margined, light spots.

ab. contrastata Schroder. Jahresber. Ent. Ver. 1926 n. 14-15.

Ground colour black, the normally dark bands light in colour.

ab. suffumata Finke. Ent. Z. 38 p. 16 1924.

Olive-brown, with the fine black sub-basal line, sharply developed subterminal, not interrupted by the usual conspicuous white spot, and a roundish black spot in the anterior third of the broad median area, which again is broadly black-edged proximally.

ab. meinheiti Finke. Ent. Z. 38 p. 16 1924.

The distal margin, boundaries of the median area and narrow circumscription of basal area moss-green, standing out sharply on the black-blue ground colour; median area narrow, showing three separated lighter spots. A striking form.

ab. ezekelii Dioszeghy. Verh. Siebenburg. Ver. Naturw. 79-80 p. 260

Ground colour brown-grey, the markings of the forewing darker, grey-brown; these form bands which are broader than the ground colour, so that the latter appears only as numerous fine, sharp lines separating them; only in the posterior part of the subterminal region does the pale colour become more dominant.

ab. fasciata Nitsche. Verh. zool.-bot. Ges. Wien 83 p. (22) 1933.

Ground colour brown, with a pale grey or white median band, markings resembling tricolorata Schrank, which has the ground colour green.

ab. albipunctata Nitsche. Verh. zool.-bot. Ges. Wien 83 p. (21) 1933.

Much darkened with black-brown, the light spot in the subterminal band conspicuous.

ab. albonigrata Nitsche. Verh. zool.-bot. Ges. Wien 83 p. (21) 1933.

Deep black-brown, with sharply contrasting white markings, namely, the basal area a central spot and three costal spots; towards the termen the black shows a seal-red bordering.

ab. pluripunctata Nitsche. Verh. zool.-bot. Ges. Wien 83 p. (22) 1933.

In addition to the pale central spot, a band-like series of subterminal white-centred spots, so that in some cases there are two pale bands, a median and a subterminal.

ab. testacea Prout. Ent. Rec. 9 p. 86 1897.

Testaceous without the dark bands.

ab. irrorata Spr.

Strongly irrorated, fourth and fifth bands incomplete.

ab. exquisita Richardson. Ent. Rec. 64 p. 270 pl. II f. 14 1952.

Forewings crossed by four thick light greenish-brown lines, situated in terminal, postmedian, submedian and sub-basal areas. The two median lines are joined by a short bar at the inner margin but are wide apart at the costa, just before which they are angulated. The space between them is coloured pale greenish-yellow, in which a darker discal mark is visible. The subterminal area and the space between sub-basal and submedian lines, are greenish-white. The basal area is greenish-yellow, darkened by indistinct basal markings. The figure shows the pale bands suffused.

ab. goodsoni Cockayne. Ent. Rec. 65 p. 165 1953.

Forewing dull pale brownish-green; the basal line is dark, there is a broad almost completely unicolorous blackish-brown median band reaching the discoidal spot, a subterminal band, and a submarginal band, both of the same colour; the border is usually the same colour as the ground.

ab. barretti Cockayne. Ent. Rec. 65 p. 165 1953.

Similar to ab. goodsoni Cockayne except that most of the costal half of the pale band external to the median band is clouded with dark brownish-green.

ab. mirabilis Cockayne. Ent. Rec. 65 p. 165 pl. 12 f. 19 1953.

Ground colour whitish suffused with rufous in the distal areas; the basal area has dark transverse lines, the more distal ones more or less fused to form a band; the antemedian line has a V-shaped indentation about a third of the way across





furcata Thunberg.  
= sordidata F. aberrational forms etc.

ab. obscura Peyerimhoff. Bull. Soc. Hist. Nat. Colmar 2 p. 121 1862.  
= infuscata Staudinger.  
Unicolorous fuscous or nearly so.

ab. sordidata Fabricius. Ent. Syst. 3 (2) p. 185 1795.  
Like type but is green with dark bands, the type form being cinereous with dark bands.

ab. oblitterata Prout. Ent. Rec. 9 p. 86 1897.  
Green, almost unmarked.

ab. tricolorata Schrank. Fauna Boica 2 (2) p. 30 1802.  
= albifasciata Prout nec. Pack. Ent. Rec. 9 p. 86 1897.  
Resembling sordidata with green ground and dark bands but with a pale grey or white median band.

ab. albidaria Nitsche. Verh. zool.-bot. Ges. Wien. 83 p. (21) 1933  
The ground colour whitish, fringes of both wings lighter than in typical forms.

ab. centrnotata Nitsche. Verh. zool.-bot. Ges. Wien 83 p. (22). 1933.  
In the median band of the forewing or in the roundish median spot of the forewing with a darker filling-in.  
The description is puzzling, Lemoine uses the name for the form with a row of dark spots in the lighter central area of the forewings.

ab. flavotincta Culot. Geom. III p. 253 pl. 36 f. 735 1918.  
The ground colour yellow, with a tinge of orange.

ab. cinereata Prout. Ent. Rec. 9 p. 86 1897.  
Cinereous without dark bands.

ab. fuscoundata Donovan. Brit. Ins. II p. 73 pl. 386 f. 3 1836.  
Forewings testaceous, with irregular fuscous waved bands and a few fuscous dots.  
In particular destitute of the small white spot at the posterior apex.  
The figure in the copy of Donovan at Tring shows the wings greenish yellow with very little tint of red.

ab. constricta Strand. Arch. Math. og Nat. 25 (9) p. 20 1903.  
= monetata Meves. Ent. Tidskr. 35 p. 137 1914.  
The pale central area broken up into separate rounded spots.  
This presumably is in the middle, cutting the area into two as in Meves monetata.

ab. marmorata Finko. Ent. Z. 38 p. 16 1924.  
Seal-red or rust-red ground colour, the bands, apart from the sub-basal, restricted to two; median area with a white-centred spot which reaches the costal margin.

ab. radiata Finko. Ent. Z. 38 p. 16 1924.  
To regular arrangement of the bands, ground colour blue-black, characterised by having outstandingly sharply marked veins from subcostal to 2nd. median.

ab. lucifasciata Meves. Ent. Tidskr. 35 p. 136 1914.  
Light rust-brown with dark antemedian band and subterminal line; immediately inside the latter a white band from the 2nd. submedian to the 5th. subcostal, where it is cut off by a short, thick, black longitudinal streak

ab. albomaculata Kieffer.  
Forewing black; median area bounded by narrow reddish bands, in the middle of which a black stripe or line stands out distinctly; in the median area are two white spots, preceded costally by a white lunule pupilled with black.

ab. roseoolivacea Schawerda. Verh. zool.-bot. Ges. Wien 64 p. 369 1914.  
Forewing with basal area, a costal spot before apex and a broad median band rose red, the rest banded with light and dark olive-green; the whitish subterminal spot normal. Hindwing normal.





coeruleata F. aberrational forms etc.

ab. semifuscata Prout. Seitz 4 p.263 I9I4.

Has the median band mostly infuscated, except at mid-costa, but the narrow pale green bands which bound it remain unaltered.

ab. obscurevirescens Lempke. Tijdschr. Ent. 92 p.2I2 I950.

Basal and central area of the forewings dark green, the rest of the wings of the normal dark colours.

ab. obsoletaria Schille. Soc. Ent. I5 p. II3 I900.

= infuscata Prout. Ent. Rec. 13. p. 336. 1901.

= cinerascens Strand.

= nigrescens Huene.

Forewing almost uniformly dark cinereous or fuscous.

ab. literata Donovan. Brit. Ins. I4 p.80 pl.499 f.2. I8I0.

Forewings dark fuscous with wavy lines, the central band milky white.

ab. lineata Heinrich. Dtsch. Ent. Z. 7 p.528 pl.4 f.20 I9I6.

Only differs from normal in that the white subterminal of the forewing is exceptionally well-developed and continuous.

ab. pallida Lempke. Tijdschr. Ent. 92 p.2I2 I950.

The whole forewings unicolorous white-green with which the three thin dark lines bordering basal and central areas, a dark band between these areas, and a dark submarginal band, strongly contrast.

ab. striata Lempke. Tijdschr. Ent. 92 p.2I2 I950.

All nervures in the pale central area strongly darkened.

ab. constricta Strand. Archiv. Math. og Nat. 22 (5) p.32 I900.

The median band of the forewing interrupted in several places, forming spots.

ab. approximata Lempke. Tijdschr. Ent. 92 p.2I3 I950. (descript. vol. 90 p. I47)

The two transverse lines bordering the central band are close together.

ab. impuncta Lempke. Tijdschr. Ent. 92 p.2I3 I950. (descript. vol. 90 p. I47)

The central spot of the forewings is absent.

ab. marmorata Djakonov. Ark. Zool. 2I A no. I p. I4

Forewing much lighter than type; the entire median band clear white, without coll-dot, sharply bounded by zigzag black lines; proximal area dirty yellowish with two lines besides the antemedian; distal area of the same colour, with termen interruptedly black and with a very incomplete dark subterminal line.

ab. nigerrima Harrison. Entomologist 44 p.4I3 I9II.

The description says "Nearly all the specimens are black" ab. nigerrima.

ab. unipunctata Harrison. Entomologist 44 p.4I3 I9II.

Unicolorous black with the exception of a pale spot on the dorsum where the central fascia normally ends.

ab. beryllata Dadd. Dtsch. Ent. Z. I92I p.93.

Dadd says that the whole scheme of markings are like ab. arctica Paux except that the median band remains distinctly light-green, narrowed but not interrupted or constricted. He describes arctica as "generally darker brown, the central band only perceptible by the still darker enclosing lines; particularly striking are the two lines, which in the type are ashy-grey but in this form dark violet.

ab. arctica Paux.

Scarcely intelligibly described "Markings of forewing maroon violet and rosy yellowish.

ab. gunillae Nordstrom. Svenska Fjarilar (1935-41) 1940. pt. II. p.270; pl.39, f.4c.

As in ab. obsoletaria Schille, but in addition the narrow band has 6 broad blue-violet edges on its inner margin, and the centre of the hind-edge (?inner margin?) is blue-violet.

Not a very clear description; we have not seen the original.



ruberata Err. aberrational forms etc.

ab. variegata Prout. Seitz 4 p. 263 pl. IOK I914.

More intensively marked with a rust-red and black, first and second bands nearly confluent, sometimes some red suffusion in the median area.

ab. grisescens Huene. Berl. Ent. Z. 51 p. 256 I906.

= cinerascens Stichel nec. Strand.

Weakly marked grey form with no rust-red markings, median area not paler.

ab. infuscata Dannehl. Ent. Z. 47 p. 123 I933.

Almost unicolorous, strongly suffused with smoky-grey, the white lines wanting, the bands hardly distinguishable.

ab. aterrima Harrison. Entomologist 44 p. 413 I911.

Uniformly black with markings practically obscured.

ab. nigrocastanea Cockayne. Ent. Rec. 65 p. 166 I953.

Ground colour of the forewing is uniform dark red brown with the usual markings present but inconspicuous.

ab. bivirgata Cockayne. Ent. Rec. 65 p. 166 pl. I2 f. 21 I953.

Pale grey resembling ab. grisescens Huene except that the space between the first and second bands, which are grey and inconspicuous, is darkened and forms a conspicuous band, and the subterminal line forms another conspicuous dark band; the apical mark is also dark.

ab. unilineata Cockayne. Ent. Rec. 65 p. 166 I953.

Forewing almost unicolorous pale grey with a thin dark oblique line near the base, a dark mark external to it on the inner margin, and a small dark apical mark; the usual indistinct transverse lines are absent or obsolescent.

ab. constricta Loeberrbauer. Z. Wien. Ent. Ges. 38 n. 20 pl. I Row 6 March I953.

The light middle band is broken or divided up into single spots with black surrounds

ab. constricta Cockayne. Ent. Rec. 65 p. 166 I953.

The pale band of the forewing is very narrow.

ab. marginotata Cockayne. Ent. Rec. 65 p. 166 I953.

Grey form like ab. grisescens Huene, but with a row of conspicuous black marks along the termen.

ab. fasciata Loeberrbauer. Z. Wien. Ent. Ges. 38 p. 20 pl. I Row 3 I953.

The basal area and middle band are sharply demarcated by strong black borders so that the middle band becomes particularly prominent. The reddish lines well developed, finely bordered with blackish, the grey bands with a bluish tint.

ab. argentata Loeberrbauer. Z. Wien. Ent. Ges. 38 p. 20 pl. I Row 4 I953.

All bands, grey as well as red, enclosed by silver-grey lines. The broad and pale middle band represented by a narrow dark grey one, which is equally demarcated by whitish silver-grey lines; the four reddish bands are, though equally recognisable, only tinged with light red, the whole wings thus appear more silvery grey.

ab. margaritata Loeberrbauer. Z. Wien. Ent. Ges. 38 p. 20 pl. I Row 5 I953.

The dark grey middle band broken through or interrupted in several places by the bordering silver-grey lines; it thus appears dissolved into 4 or 5 separate spots

ab. suffusa Loeberrbauer. Z. Wien. Ent. Ges. 38 p. 20 pl. I Row 7 I953.

The red colour is predominant. From the reddish basal area the whole of the forewing has a red overtone, only the sub-basal and marginal bands remaining grey.





badiata Schiff. aberrational forms etc.

ab. atrox Schwingenschuss.

The forewing darkened with violet-blue, the markings suppressed except the white subterminal dot, a yellow-brown spot around the cell-dot and cloudy indications of the yellow-brown median area.

ab. alpestris Neuberger. Soc. Ent. 19 p. 20 1904.

The median area brown, the distal part moderately darkened; no pale part. Hindwing also somewhat browner than type.

ab. planicolor Lempke. Tijdsch. Ent. 92 p. 213 1950.

Ground colour of the forewings red-brown, central area of the same tint.

ab. eckfordi Smith. Proc. Chester Soc. Nat. Sci. Lit. & Art. 1947 p. 72 pl. f. 7.

= defasciata Lempke. Tijdschr. Ent. 92 p. 213 1950.

Forewings unicolorous, only the black lines bordering basal and central area, and the black apical dash showing. These are very fine, the brown bands normally inside them fail completely.

ab. impuncta Lempke. Tijdschr. Ent. 92 p. 214 1950. (descript. vol. 90 p. 147)

The central spot of the forewings is absent.

ab. approximata Lempke. Tijdschr. Ent. 92 p. 214 1950. (descript. vol. 90 p. 147)

The two transverse lines which border the central area of the forewings are close together.

ab. obscurata Lempke. Tijdschr. Ent. 92 p. 213 1950.

Ground colour of the forewings black-brown, central area pale.

ab. pallidaria Lambillion. Rev. Soc. Ent. Nam. 9 p. 56 1909. (original spelling is pallida)  
Paler, basal area <sup>not blackish</sup> ~~little~~ darkened, distal area not darkened, median band whitish <sup>very light ferruginous</sup> without a blue-grey spot distally to the cell.

ab. rectifasciaria Lambillion. Rev. Soc. Ent. Nam. 9 p. 56 1909.

The pale median area one third broader than usual, not traversed by lines, the ~~lines~~ lines which bound it sharply marked.

ab. subbadiata Strand. Arch. Math. og. Nat. 25 (9) p. 2 1903.

The median band narrow and interrupted in the middle to form an upper and lower light patch.

ab. ocellaria Bodart. Rev. Soc. Ent. Nam. 10 p. 31 1910.

The median band ~~interrupted~~, broken or interrupted in the middle as in the preceding subbadiata Strand <sup>and below this</sup> but in more than one place so that the lower part is in the form of <sup>3</sup> separate ~~spots~~ ocelli.

ab. costiconfluens Silbernagel. Acta Soc. Ent. bohém. 40 p. 6 1943.

ab. fennokarelica Kaisila. Ann. Ent. Fenn. 11 p. 210.





comitata L. aberrational forms etc.

ab. unicolor Lempke. Tijdschr. Ent. 92 p. 214 1950.

The markings of the forewings only a little darker than the ground colour.

ab. contrastata Lempke. Tijdschr. Ent. 92 p. 214 1950.

The line bordering the central area externally, blackish, sharply contrasting.

ab. zonata Wahlgrön. Ent. Tidskr. 34 p. 25 1913.

Median band entirely brown-black, ground colour normal.

ab. tangens Lempke. Tijdschr. Ent. 92 p. 214 1950. (descript. vol. 90 p. 147)

The two transverse lines bordering the central area of the forewings touch each other below the middle and separate again.

ab. impuncta Lempke. Tijdschr. Ent. 92 p. 214 1950. (descript. vol. 90 p. 147)

The central spot of the forewing is absent.

ab. ferruginascens Krulikowsky. Soc. Ent. 23 1.12 1908.

Bright rust-reddish.

ab. moldavinata Caradja.

Much darker and more unicolorous, the hindwing also darkened.

ab. argentata Meves. Ent. Tidskr. 1914. 35. p. 137.

The ground colour dull silver-grey instead of ochreous. (From German transl., p. 140)

ab. limbofumata Romaniszyn. Spraw. Kom. Fiziogr. Krakow 67 p. 149 1933.

Z. Ost. Ent. Ver. 18 p. 84 fig. 2 1933.

The forewings show an intensive darkening of the distal area. This begins at the first line external to the discal dot and fills in the space between this line and the main, toothed, postmedian, thus forming a distinct black-brown band. The outer area is also darkened but the band can be clearly seen as a darker and separate character, the basal bands also very dark. On the hindwings the outer half is considerably darkened.

ab. paradoxa Lempke. Tijdschr. Ent. 1967. 110. p. 306.

Upperside of forewings with the areas between the basal and central bands, and between the central band and the outer margin darkened, as a result of which there are two pale and two dark bands which strongly contrast with each other. This is a far from clear description; it must be similar to the preceding

ab. limbofumata Roman., but it presumably has normal hindwings.

ab. obscura Lempke. Tijdschr. Ent. 1967. 110. p. 306.

Ground colour of the wings light grey-brown, the markings of the bands and lines dark brown. The yellow tint fails completely.



cambrica Curt. aberrational forms etc.

ab. latefasciata Strand. Nyl. Mag. Naturv. (1901) p. 39

The median area very broad, the lines which bound it are parallel, not approximated in the posterior half.

ab. pygmaea Tengstr.

Small with the central area constricted.

ab. webbi Prout. Trans. City Lond. Ent. Nat. Hist. Soc. 1904 p. 45.

The markings almost obliterated excepting at the costal margin and on the median vein and its branches.

ab. bradyi Prout. Trans. City Lond. Ent. Nat. Hist. Soc. 1904 p. 45.

= nigricaria Rebel. Berge's Schmett. 1910 n. 344.

Both wings uniformly suffused with dark smoke-colour.

ab. lofthousei Prout. Trans. City Lond. Ent. Nat. Hist. Soc. 1904 p. 45.

Forewing suffused with smoke-colour but remaining longitudinally rayed with white in the distal area, hindwing not infuscated.

ab. suffusa Prout. Trans. City Lond. Ent. Nat. Hist. Soc. 1904 p. 45.

The aberration figured by Barrett vol. 8 pl. 349 f. 1C, described by him as "suffused with smoky clouding, through which the markings show in darker colour".

The figure shows the markings much more normal than in bradyi Prout in which they are almost hidden, the hindwings are somewhat darkened but not so unicolorous as in bradyi. In lofthousei Prout the hindwings are not darkened.

ab. erutaria Boisduval. Index Meth. 1840 p. 203.

Ground colour much whiter than in type, the markings well pronounced.

ab. pallida Cockayne. Entomologist 85 p. 269 pl. 4 f. 16 1952.

On the forewing in normal specimens there is a dark line bordering the median area externally, and a fainter line parallel to and outside it. This second line is absent, and all the other transverse lines and shades are paler than usual. Hindwing almost pure white and the usual faint transverse shades are almost obsolete.



testaceata Donovan. aberrational forms etc.

ab. *impuncta* Lempke. Tijdschr. Ent. 92 p. 215 1950. (descript. vol. 90 p. 147)  
The central spot of the forewings is absent.

ab. *intermedia* Bankes. Entomologist 40 p. 33 1907.  
Dark dusting on the forewing but not altogether obscuring the whitish ground colour, the brown lines more strongly pronounced than in type.

ab. *goodwini* Bankes. Entomologist 40 p. 33 1907.  
Very dark, densely dusted with grey, usually with the brown markings still well visible but culminating in almost complete melanism.

ab. *deochrata* Stauder. Ent. Anz. 5 p. 51 1925.  
More unicolorous than type, the markings blurred or obsolescent, scarcely showing up as bands..





Geom. I47.

Hydrelia Hbn.

flammeolaria Hufn.

= luteata Schiff.

aberrational forms etc.

ab. confluens Hoffmann. Mitt. Naturw. Ver. Steiermark 53 p. 194 1917.

The two central brown stripes confluent behind the coll-dot.

ab. luteosignata Lampke. Tijdsch. Ent. 92 p. 215 1950.

The lines on the forewing not brown-yellow, but dark yellow, therefore less contrasting.

Geom. I48.

Euchoeca Hbn.

nebulata Scop.

=obliterata Hfn. aberrational forms etc.

ab. suffusa Nordstrom. Svenska Fjarilar 1941 p. 272 pl. 39 f. 14 B.

Male. Apart from the yellowish costal margin of the forewing both wings are almost unicolorous dark brown.

ab. deletata Kolossow.

Markings rudimentary, hardly perceptible.



Geom. 149.

Discoloxia Warr.

blomeri Curtis. aberrational forms etc.

ab. debrunneata Heydemann.

Apical red-brown patch undeveloped.

Geom. 150.

Asthena Hbn.

albulata Hufn.

= candidata Schiff. aberrational forms etc.

ab. anastomosata Lempke. Tijdschr. Ent. 92 p. 216 1950.

On the forewings the third and fourth transverse lines are completely, or for the greater part, united.

ab. virgata Cockayne. Entomologist 83 p. 52 pl. I f. II 1950.

There is a distinct median band incorporating the discal spot running transversely across both fore and hindwing; the basal line is represented by two dots, and there is a dot on the costa just basad of the median band; the terminal and subterminal lines are present in their usual situation on both wings.

ab. bilineata Schwingenschuss. Z. Wien Ent. Ges. 39 p. 178 1954.

Forewings with only the 2nd, 3rd, and 4th transverse lines, the 3rd. and 4th. partly fused, thus showing only two lines, all others being absent. Hindwings with only 1st. and 2nd. lines present.



murinata Sc. aberrational forms etc.

ab.italicata Milliere. Ann. Soc. Ent. Fr. 1885 p. 113.

Of typical female coloration in which two or three faintly darker lines are visible in the distal half of the forewing or of both wings, faintly crenulate and parallel with the distal margin.

ab.lactearia Stauder. Ent. Anz. 2 n. 82. 1922

Purer white than any other form in the species.

ab.aterrima Stauder. Iris 28 n. 16 1914.

Wings black, sometimes as black as O. atrata.

ab.cyparissaria Mann. Verh. zool.-bot. Ges. Wien 1854 p. 568.

Wings deep leaden-grey, almost black.

Occurs in places as a race but sometimes as an aberration.

ab.lutea Schwingenschuss. Z. Wien Ent. Ges. 39 p. 219 1954

Female .Yellow ground colour as in Cleogene lutearia (Seitz 4 pl. 24E)





Geom. I52.

*Eupithecia* Curtis.

*tenuiata* Hbn. aberrational forms etc.

ab. *niveipicta* Bastelberger. Iris 20 p.263 1907.  
The ground colour white instead of grey.

ab. *johnsoni* Harrison. Entomologist 34 p.69 1931.  
Melanic form. Presumably black.

ab. *coaequata* Dannehl. Ent. Z. 41 p.282 1927.  
Glossy grey, with strong brownish cast, the lines obsolescent or entirely wanting.  
in the latter case leaving only the cell-dot, sharp terminal dashes, subterminal  
line and traces of costal spots.

ab. *fuscosparsata* Dannehl. Ent. Z. 41 p.282 1927.  
Deep brown-grey, the lines very fine, the whole of the wings watered with darker  
strigulae.

subsp. *cinerae* Gregson. Young Nat. 9 p.104 1888.  
The race from Scotland. Clearer ash-grey with the lines weaker.  
The series in the British collection at Tring supports the view that this is a  
race.

Geom. I53.

*inturbata* Hbn.

= *subciliata* Dbl. aberrational forms etc.



Geom. 154.

*Eupithoeia* Curtis.

*haworthiata* Dbld.

= *isogrammaria* H.-S.

aberrational forms etc.

*ab. coriolutea* Möbius.

Leather yellow in colour, the markings distinct. Bred from a larva or it would not have been recognised.

Geom. 155.

*plumbeolata* Haworth. aberrational forms etc.

*ab. singularia* H.-Sch. Syst. Bearb. Sch. Eur. 3 p. 121.

The cell dot definitely perceptible.

*ab. enucleata* Dietze. Biol. Eur. 1910 pl. 72 f. 248.

Larger, coarsely scaled, its grey tone still less brownish.

*ab. uralensis* Dietze. Biol. Eur. 1910 pl. 72 f. 246

Relatively small, with numerous light spots, recalling *Eup. weissliniota* Metz.

*ab. flaveolata* Dannohl. Ent. Z. 39 p. 16 1925.

Uniform light leather-yellow with scarcely a trace of the grey marking.

*ab. plumbeolata* Dannohl. Ent. Z. 41 p. 279 1927.

Dead white-grey, the dark-brown and grey-brown elements wanting, thus as good as markingless and, especially in fresh specimens, showing a silky gloss. Scaling very fine, in marked contrast to *ab. enucleata* Dietze.

*ab. exlicata* Dannohl. Ent. Z. 41 p. 280 1927.

Demarcation of the median area strongly defined, the whole of this area darker than the basal and distal.

*ab. lividata* Dannohl. Ent. Z. 41 p. 280 1927.

Densely irrorated throughout with dark-brown or black-brown, much recalling a very dark *Eup. immundata* Z. except in shape.



Geom. 156.

*Eupithecia* Curtis.

*valerianata* Hbn. aberrational forms etc.

Geom. 157.

*pini* Retz.

= *abictaria* Gouze.

= *strobilata* Bkh.

= *togata* Hbn. aberrational forms etc.

*ab. constricta* Prout. Seitz 4 p. 276 1914.

Median area reduced to width of only 1-2 mm., the antemedian and postmedian lines connected by black veins.





## linariata W. aberrational form ta.

ab. pallescens Dietze. Biol. Sup. 1913 p. 34. pl. 85 f. 996.

The figure is bad, apparently it is a washed-out, possibly pathological form.

ab. nigrofasciata Dietze. Biol. Sup. 1913 p. 34 pl. 85 f. 994.

Darkened, the median band almost solidly blackish.

ab. praeruptata Richardson. Ent. Rec. 64 p. 271 pl. XI f. 10 1952.

The black band of the forewings is broken up into a short curved bar and two minute dots.

ab. punctata Cockayne. Ent. Rec. 65 p. 167 pl. 12 f. 1 1953.

On the forewing the basal line is reduced to a spot on the costa and the median band is reduced to a central spot and a small mark on the inner margin.

ab. approximata Lempke. Tijdschr. Ent. 94 p. 229 1951. (descript. vol 90 p. 147)

The two transverse lines which border the central area of the forewings are close together.

ab. reducta Lempke. Tijdschr. Ent. 94 p. 229 1951. (nom. preoc. Foltin 1938)

Central area of the forewings much lighter than normal through strong reduction of the dark colour.

ab. reducta Foltin. Z. Ost. Ent. Ver. 23 p. 126 1938.

Middle area, as far as the small spot on costa, is washed-out white. It has a very narrow middle band.

ab. flavofasciata Foltin. Z. Ost. Ent. Ver. 23 p. 126 1938.

The middle band completely washed-out; also the blackish dots above the middle and the inner margin are washed out. Hindwings with grey markings only slightly developed.



pulchellata Steph. aberrational forms etc.

ab. iberica Dietze. Biol. Eup. 1913 p. 36 pl. 70 f. 100.

Very pale with whitish ground and sparse markings. Possibly racial.

ab. reducta Bastelberger. Iris 20 p. 263 1908.

The median band mostly light, the dark colour being confined mostly to a small spot round the cell dot.

ab. approximata Lempke. Tijdschr. Ent. 94 p. 230 1951. (descript. vol. 90 p. 147)

The two lines bordering the central area are close together.

ab. guttata Cockayne. Ent. Rec. 65 p. 167 1953.

Forewing with the ordinary markings very faint, the median area slightly paler, the discoidal dot is black and conspicuous. Hindwing similar but with a smaller discoidal spot.

ab. defasciata Metschl & Salzl. Iris 49 p. 93 1935.

Transverse band of the forewing entirely absent.

subsp. hebulium Sheldon. Ent. Rec. II p. 344 1899.

The race from the Hebrides. The median band somewhat darker, the brown bands much darker and less yellowish, the basal patch more completely dark-filled. Hindwing somewhat darker.



irriguata Hbn. aberrational forms etc.

ab. franconica Dietze. Biol. Ent. 1910, vol. 76 f. 803-804.

Poorly marked, the black markings, especially in the ♀, dissipated into a regular grey irroration.

Prout determines this as an aberration, not a race.

exiguata Hbn. aberrational forms etc.

subsp. muricolor Prout. Seitz 4 Suppl. p. 187 1938.

Extremely distinct in colour, of an exceptionally cold grey, the general tone scarcely, if at all, more tinged with brownish than the "mouse-grey" of Ridgway; markings rather strong. Apparently constant in E. Aberdeenshire.

ab. albofasciata Lempke. Tijdschr. Ent. 94 p. 231 1951.

The central area of the forewings whitish.





Geom. I62.

Empithocia Curt.

insignata Hbn.  
= consignata Bkh. aberrational forms etc.

Geom. I63.

palustraria Dbl.  
= pygmaeata Hbn. aberrational forms etc.

ab. pseudozibellinata Dietze. Biol. Ent. 1910 . pl. 72 f. 267.  
More copiously sprinkled with light scales.

ab. grabei Cornelsen.

Light fawn-colour, weakly glossy, the posterior white subterminal spot developed on both wings. Underside much lighter than type, with distinct lines, the distal area of both wings darker than the rest, light smoke-brownish.



centaureata Schiff.

= oblongata Thnbg. aberrational forms etc.

ab. obscura Dietze. Biol. Eur. 1910. p. 63; pl. 70 f. 132.

Ground colour of the wings with a smoky suffusion.

ab. centralisata Staudinger. Iris 5 p. 250 1892.

= albidior Heinrich. Dtsch. Ent. Z. 1917 p. 528 pl. 4 f. 3.

= punctata Hannemann. Int. Ent. Z. II p. 62 1917.

The markings weaker, sometimes (with the exception of the discal mark) almost entirely obsolete.

In albidior the markings are slight and the mid-coastal spot greatly reduced.

In punctata the black discocostal spot is reduced to a dot.

## Geom. I65.

venosata F. aberrational forms etc.

subsp. fumosae Gregson. Young Nat. 8 p. III 1887.

= nubilata Bohatsch. Iris 6 p. 33 1893.

The race from Shetland. Dark smoke coloured.

subsp. ochraceae Gregson. Young Nat. 7 p. 128 1886.

= orcadensis Prout. Ent. Rec. 13 p. 336 1901.

The race from Orkney. The ground colour darkened but ochreous or clay-yellowish, not smoky; markings normal or sometimes weakened.

ab. bandanae Gregson. Young Nat. 8 p. III 1887.

= grisea Dietze. Biol. Eur. 1913 p. 56 pl. 71 f. 164.

The white bands remain conspicuous on the smoky ground. Occurs among the subsp. fumosae Greys.

ab. confluens Dietze. Biol. Eur. 1913 p. 56 pl. 85 f. 923.

Median line of the forewing thickened, in part confluent with the antemedian, sometimes only by some black shading.

ab. circumfluxa Kitt. Z. Ost. Ent. Ver. 10 p. 28 fig. 5 1925.

The black lines of the forewing in part thickened, especially at costa and inner margin, distal area somewhat suffused.

subsp. hebridensis Curtis, J. Soc. Brit. Ent. 2 p. 169 1944.

The race from the Hebrides. Markings normal, ground colour darkened.

ab. basinigrata Cockayne. Ent. Rec. 66 p. 66 pl. 2 f. 5 1954.

Forewing with basal area normal but the area between the black basal line and the antemedian is smoky, giving it the appearance of having a blackish base.

subsp. plumbea Huggins. Ent. Rec. 1962. 74. p. 171.

Ground colour deep leaden-grey, the netted pattern jet-black and conspicuous. From the Blaskets, Co. Kerry.

Said to be darker than subsp. fumosae Gregson from Shetland, looking almost black at a short distance.

ab. sepiata Huggins. Ent. Rec. 1968. 80. p. 157.

Markings as in the type, but the whole insect is of a very dark sepia colour; the netted markings are brownish black, not black as in subsp. plumbea Huggins.

The Type was a specimen of subsp. plumbea Huggins, but presumably the form could occur in other subspecies, as well as in the type-form.



trisinaria H.-Sch. aberrational forms etc.

ab. angelicata Prout. Seitz 4 Suppl. p. 191 1938.  
All wings black. Described from bred specimens.

Geom. 167.

intricata Zett.  
(= helveticaria Bsd. ?) aberrational forms etc.

subsp. arcuata Freyer. Neue Beitr. 4 p. 145 pl. 372 1841.  
On the average rather broader winged than intricata, the colour more grey, or violet-grey (less brown), the alternately light and dark spotted veins, which are characteristic of this species and E. satyrata, showing up more distinctly. Occurs in Southern England and Central Europe.

subsp. or race helveticaria Boisduval. Ind. Moth. 1840 p. 208.  
Scotland. Differs little from the following millieraria Wnuk. also from Scotland.  
Possibly not the name for British race at all but confined to the Continent.

subsp. or race millieraria Wnukowsky. (nom. nov. pro anglicata Mill.) *Zool. Anz.* 1929. 53. 1223  
= anglicata Milliere. Icon. 3 p. 102 pl. 110 f. 20 1869. (nom. preoc. 11-54)  
The Scottish race from the Pentland Hills. Little different from helveticaria, and if the latter is not the name for Scottish specimens, becomes the name for the dark Scottish race. Typical intricata Zett. of which some authors make helveticaria a synonym, does not occur in Britain.  
Milliere describes his anglicata as - "Less dark than helveticaria, of a light cinnamon-brown, lines often obliterated, etc." This does not help much because his figure of helveticaria is grey.

ab. mediofasciata Dietze. Biol. Eup. 1913 p. 76 pl. 74 f. 422 & 432.  
Median area of the forewing wholly or in part darkened, distal area relatively weakly marked.

ab. suffusa Dietze. Biol. Eup. 1913 p. 76 pl. 74 f. 429 & 436.  
Entirely or almost without markings except the dark cell-spot.

ab. obscurata Dioszeghy. Verh. Siebenburg Ver. Naturw. 83-84 p. 120 1935.

subsp. hibernica Merc. Ent. Gaz. 1964. 15. p. 73. pl. 3. f. 2.  
Distinguished from other races by its overall grey and white appearance, instead of brown, and by the well contrasted greyish-black pattern on the white ground of the forewings.  
Head, thorax and abdomen white irrorated with grey. Forewings white more or less irrorated with grey, transverse fasciae greyish-black, intensely black near costa. Hindwings more densely irrorated with grey.  
The race from the Burren, Co. Clare.





tripunctaria H.-Sch. aberrational forms etc.

ab. privata Dietze. Biol. Eup. 1913 p. 87 pl. 85 f. 941.  
Poorly marked.

ab. anglicata Barrett. Ent. Mon. Mag. 13 p. 278 1877.  
= anglicata Gumpbg.

Smoky black, quite markingless except for the deeper black cell spot.

ab. intermedia Lempke. Tijdschr. Ent. 94 p. 237 1951.

Forewings black, with a discal spot, and a more or less complete row of white spots along the outer border.

race or subsp. callunaria Doubleday. Zoologist 8 Apr. CV 1850.

The race from N. England and Scotland. Narrower winged, cinereous, with pale lines.

race or subsp. curzoni Gregson. Entom. 1884: 17: p. 230; fig'd. Entom. 14, pl. 1, f. 2 & 3.

The race from Shetland. Still narrower winged but very sharply marked, especially the thick antemedian and postmedian lines, the latter more angulated, sometimes also a dark line proximally to the subterminal. Very variable.

ab. strandi Tuchs. Steptin. Ent. Mtg. 62 p. 379 1901.

Pale whitish dusted; differs from callunaria in being more strongly marked, the principle lines darkened on the costa.

ab. nigrofasciata Dietze. Biol. Eup. 1913 p. 85 pl. 85 f. 932.

The median area broadly darkened.

ab. transversa Dietze. Biol. Eup. 1913 p. 85 pl. 85 f. 933.

Median area only in part darkened, leaving pale transverse bands.

ab. bistrigata Dietze. Biol. Eup. 1913 p. 85 pl. 85 f. 934.

Only the boundary lines of the median area dark.

ab. caeca Dietze. Biol. Eup. 1913 p. 84 .

The discal dot absent.

ab. fagicolaria Robson & Gardner.

Brownish, approaching the colour of helveticaria. Prout says this form prevails in the south of England, the species is so variable in colour that it can hardly be racial.

ab. contrastata Dannahl. Ent. 4.39 p. 16 1925.

The predominant colour is much darkened by black-brown irroration and speckling and contrasts strongly with the white bands. Somewhat recalls curzoni.

ab. medionotata Dietze. Biol. Eup. 1910 p. 71 f. 206-7.

More light ground colour showing so that it looks whiter than normal satyrata but the cell spot is strikingly black.

ab. trifasciata Wolff. Zool. Faroes 2 pt. I No. 39 p. 13 1929.

Belongs to the race curzoni. Whitish ochreous, forewing with brownish basal patch, both wings with three brown bands, the distal area almost without markings.

ab. trilineata Cockayne. Ent. Soc. 65 p. 167 p. 12 f. 3 1951.

Almost identical with the preceding which however belongs to the distinct curzoni. Unusually pale with three lines on both fore and hindwings. Abbott's Wood. S. England.



ab. nigra Cockayne. Ent. 100.65 p. I67 1953.  
All black with the markings just visible.

ab. subatrata Staudinger. Cat. Ed. 2 p. 197 1871.  
Almost unicolorous dark-gray usually with the middle line visible.

ab. griseata Lempke. Tijdschr. Ent. 94 p. 256 1951.  
Ground colour gray, sometimes with feeble brown tint, forewings with many undulating transverse lines, nervures with small black spots, central spot distinct..

ab. limbopunctata Dietze. Biol. Eur. 1910 p. 71 f. 193.  
Dark gray with a prominent series of isolated light spots representing the subterminal. Possibly racial.

ab. concolor Dietze. Biol. Eur. 1913 p. 85 pl. 71 f. 196-7.  
Unicolorous violet-gray with the discal dot obsolete.

ab. grisescens Dietze. Biol. Eur. 1913 p. 90 pl. 72 f. 295.  
Much more mixed with gray.



Geom. I/1.

Eupithesia Curt.

absinthiata Clerck. aberrational forms etc.

ab. obscura Dietze. Biol. Sup. 1910 . pl. 71 f. 182.  
Much darker, the forewing described as sepia-coloured.

Geom. I/2.

gooseinsata Labille. aberrational forms etc.

ab. mediofasciata Lampke. Tijdschr. Ent. 94 p. 259 1951.  
Central area of the forewings darkened.

ab. obscura Cockayne. Ent. Gaz. 2 p. 101 pl. 2 f. 3-4 1951.





Geom. I73.

*Eupithecia* Curt.

*denotata* Hbn.

= *campanulata* H.-Sch. aberrational form, etc.

ab. *solidaginis* Fuchs. Jahrb. Nassau Ver. Nat. 55 p. 78 1900.  
Clear dark slate grey without a tinge of brown.

ab. *ochraceata* Fuchs. Soc. Ent. 19 p. 18 1904.  
Both wings ochre-yellow, almost without markings.

rac. or subsp. *jasioneata* Crewe. Entomologist 14 p. 198 pl. I f. 4-5 1881.  
Smaller, darker and strongly marked, possibly with slightly narrower wings; general  
tone grey to blackish-grey. From west of England and Ireland.

Geom. I74.

*expallidata* Obl. aberrational forms etc.

ab. *pseudoabsinthiata* Schwingenschuss. Z. Wien Ent. Ges. 38 p. 254 1953.  
Dark red-brown, the colour of *absinthiata*. Differs from the latter by the broader  
wings, more distinct markings and the large central spot, also by its late  
emergence.

ab. *pallida* Schwingenschuss. Z. Wien Ent. Ges. 38 p. 254 1953.  
White-grey, virtually without markings.



vulgata Haworth. aberrational forms etc.

ab. atronicta Dietze. Biol. Ent. 1910 p. 91 pl. 72 f. 501-2.  
Strongly darkened, in extreme cases almost black.

ab. nigrofasciata Dietze. Biol. Ent. 1913 p. 91 pl. 72 f. 503.  
Weakly marked, the median area darkened.

ab. unicolor Lempke. Tijdschr. Ent. 94 p. 243. 1951.  
The ground colour normal, brownish, the markings absent with the exception of the central spot.

ab. impuncta Lempke. Tijdschr. Ent. 94 p. 243 1951. (descript. vol. 90 p. 147)  
The central spot of the forewings absent.

subsp. scotica Cockayne. Entomologist 84 p. 154 1951.  
Rather larger than English specimens; The dark transverse lines are more distinct, and the ground colour between them is paler, especially on the costa, producing a more striped appearance; the submarginal line terminating in the double spot at the anal angle is whiter and more distinct. Ground colour varies from light-brown to blackish-grey. The subspecies from Scotland.

subsp. clarensis Huggins Entom. 1962: 95: p. 45.  
Subspecies from the Burren, Co. Clare, Ireland.

castigata Hbn. aberrational forms etc.

ab. obscura Dietze. Biol. Ent. 1910 p. 94 pl. 72 f. 307-8.  
The ground colour more or less strongly darkened, only the subterminal remaining clear.

ab. obscurissima Prout. Seitz 4 n. 287 1914.  
Uniformly black, the central spot more intensely black.



ictorata Villers. aberrational forms etc.

Type form of brighter colour with costa of forewings lighter and with distinct transverse lines, apparently not occurring in England.

ab. subfulvata Haworth. Lep. Brit. 1809 p. 357.

The common form in England. Ground colour of forewings light rust-brown with darker costa and inner-margin, usually the transverse lines are not very distinct. This may well be a subspecies.

ab. oxydata Freitschke. Schmott. Eur. 6 (2) p. 114 1828.

The fulvous area of the forewings less sharply defined though still quite apparent, well marbled with greyish.

ab. grisea Lampke. Tijdschr. Ent. 94 p. 246 1951.

The rust-brown colour in the forewing reduced to a small spot under the cell-spot the rest of wing greyish.

ab. impuncta Lampke. Tijdschr. Ent. 94 p. 246 1951. (descript. vol. 90 p. 147)

The central spot of the forewings absent.

ab. dietzei Prout. (nom. nov. pro cognata <sup>Dietze Steph.</sup> ~~Steph.~~) Seitz 4 p. 288 1914.

The thorax and basal part of the costa of the forewing whitish otherwise as oxydata Tr.

ab. cognata Stephens. Ill. Haust. 3 p. 288 1831.

Possibly a race, based on three specimens all from Scotland.

Forewings cinereous, marbled with rufous and white, several of the nervures are longitudinally streaked with black and the cell-dot is conspicuous.

The form must be very similar to grisea Lpk. or oxydata Tr.

ab. excelsa Dietze. Biol. Ent. 1910 p. 96 pl. 73 f. 317-8.

Scarcely a trace of the fulvous of the forewing, discernible.

ab. melana Dietze. Biol. Ent. 1910 p. 96 pl. 73 f. 327.

Much suffused with blackish, almost melanic.

ab. goodsoni Cockayne. Ent. Rec. 65 p. 167 pl. 12 f. 5 1953.

Modification of subfulvata Haw. Costa of forewing entirely dark, lacking the usual pale lines. Below the median nervure and on each side of nervure 2 is a longitudinal band of fuscous crossed transversely by pale lines; the wavy submarginal pale line is indistinct and pale marginal lunules absent. The hindwing darker than normal and the usual markings almost absent.

ab. flavescens Dietze. Biol. Ent. 1910 p. 96 pl. 73 f. 324.

The ground colour is altered to loam-yellowish.

ab. intermedia Dietze. Biol. Ent. 1910 p. 95 pl. 73 f. 325-6.

Intermediate between the brown, typical form and oxydata Tr., richer marked than the former, less rich than the latter.





## succenturiata L. aberrational forms etc.

ab. disparata Hbn. Samml. Eur. Schm. I796-99 pl. 47 f. 246.

Rust-coloured suffusion along the inner margin.

ab. exalbidata Staudinger. Cat. Ed. 3 p. 315 I901.

The dark markings, even at the costal and distal margins, being much reduced; hindwings similar.

ab. malaisi Djakonov. Arch. Zool. 21 A No. 1 p. 18 fig.

Forewing wholly white, the costal margin strongly darkened, a large black collar-dot touching the costal shade and a dark shaded median; the fringes are strongly chequered; hindwing likewise white, the base somewhat shaded, fringes as on forewing.

ab. extrema Dietze. Biol. Eup. I913 p. 98 pl. 73 f. 337.

Exceptionally light, even the dark distal borders weakened.

ab. piperata Stephens. Ill. Haust. 3 p. 288 I831.

This would seem to be synonymous with the type form.

ab. obscurata Lempke. Tijdschr. Ent. 94 p. 247 I951.

The white of the forewings almost completely replaced by the dark colour, it only remains in a few transverse lines and, as a rule, in a spot at the base; hindwings also darkened.

ab. bistrigata Lempke. Tijdschr. Ent. 94 p. 247 I951.

Both side of the central area of the forewings are bordered by sharp, dark transverse lines which continue from costa to inner margin, other markings not darkened.

Geom. I79.

subunbrata Schiff.

= scabiosata Bkh.

aberrational forms etc.

ab. obrutaria Herrich.-Schaffer. Syst. Bearb. 3 p. 126 pl. 24 f. 145 I848.

The markings less copious, outer part of the distal area very sharply marked, remaining darkened. Dwarf form.

ab. aequistrigata Staudinger. Cat. Ed. 2 p. 194 I871.

More equally marked throughout.

ab. bistrigata Dietze. Biol. Eup. I913 p. 103 pl. 76 f. 578.

Weakly marked, leaving only the ante and postmedian bands relatively conspicuous.

ab. obscurata Lempke. Tijdschr. Ent. 94 p. 248 I951.

Wings darkened, with only very feeble remains of the white colour.

ab. impuncta Lempke. Tijdschr. Ent. 94 p. 248 I951 (descript. vol. 90 p. 147)

Central spot of the forewing absent.



Geom. I80.

*Eupithecia* Curt.

*subnotata* Hbn. aberrational forms etc.

ab. *variegata* Lempke. Tijdschr. 94 p. 248 1951.

Basal and postdiscal area of the forewings pale grey, central area (bordered on both sides by a dark line) and marginal area of the normal ground colour.

ab. *brunnea* Lempke. Tijdschr. Ent. 94 p. 249 1951.

Ground colour of the forewings dark brown.

ab. *impuncta* Lempke. Tijdschr. Ent. 94 p. 249 1951. (descript. vol. 90 p. 147)

Central spot of the forewing absent.

Geom. I81.

*distinctaria* H.-Sch. aberrational forms etc.

subsp. *constrictata* Guen. N.H. Ins. Lep. 2 p. 334 1858.

Prout says this is the name for the British race.

ab. *famelica* Dietze. (Prout in Seitz 4 Suppl. p. 199 1938.)

Small and poorly marked, probably the result of malnutrition.



Geom. I82.

*Eupithecia* Curt.

*indigata* Hbn. aberrational forms etc.

ab. *tristrigata* Fuchs. Soc. Ent. I9 p. I8 I904.

Both wings with three sharply expressed black lines.

ab. *limbofasciaria* Dietze. Biol. Eup. I9I3 p. II7.

About three fourths of the distal area of the forewings uniformly darkened.

Geom. I83.

*pimpinellata* Hbn. aberrational forms etc.

ab. *limbosignata* Dietze. Biol. Eup. I9I3 p. II9 (pl. 72 f. 285 as ? *denotata*.)

Brown with the light subterminal line of both wings very sharply expressed.





Geom. I84.

*Eupithecia* Curt.

*extensaria* Freyer. aberrational forms etc.  
= *prolongata* Zell.

race or subsp. *occidua* Prout. (nom. nov. pro *prolongata* Dietze n. sp. 1911.)  
Scitz. 4 p. 293 1914.

The race from England, Norfolk and Yorks coasts. Silver grey, very similar to *extensaria*, the brown bands often darker, nearly always marked with interrupted black lines, or dots or dashes on the veins.

ab. *albescens* Cockayne. Ent. Rec. 65 p. 167 pl. 12 f. 6 1950.

The transverse bands very pale and weakly marked or obsolete ant. albinistic form.

Geom. I85.

*nanata* Hbn. aberrational forms etc.

ab. *mediofasciata* Dietze. Biol. Ent. 1910 pl. 74 f. 473.

= *nigrofasciata* Dietze. Biol. Ent. 1913 p. 124. pl. 74 f. 473.

Median area of the forewing more or less strongly blackened.

ab. *angusta* Prout. (nom. nov. pro *angustata* Haw.) Scitz. 4 suppl. p. 201 1910.

The most usual English form according to Prout. Wings narrower, the forewing very lanceolate, of a purer grey and without admixture of reddish or yellowish.

ab. *oliveri* Prout. Entomologist 48 p. 7 1915.

Forewing almost entirely black, with a tinge of brown, especially in the parts which show that colour in the type; faint traces of the white postmedian band and extremely slender subterminal line. Hindwing very dark.

ab. *pauillaria* Boisduval. Gen. Ind. Meth. 1840 p. 210.

= *obscurata* Staudinger.

Small, dark summer-brood form.

ab. *bistrigata* Lempke. Tijdschr. Ent. 94 p. 250 1951.

Forewings whitish grey with the central spot, two lines bordering the central area and a dark band along the outer margin which contains the submarginal line; the rest of the wing with no markings.

ab. *bicolor* Lempke. Tijdschr. Ent. 94 p. 251 1951.

Basal half of the forewings pale grey with central spot and feeble traces of the transverse lines, from central spot to fringe dark grey with pale submarginal line; hindwings pale grey with dark central spot, traces of the transverse lines only at the inner margin.



innotata Hufn. aberrational forms etc.

Local on coasts in England, double brooded, the race fraxinata is single brooded and occurs in many inland localities. The type form is larger and not so dark as fraxinata.

race or subsp. fraxinata Crewe. Ent. Annual I863 p. II6.

Generally smaller and darker than type form, wide-spread whereas the type form is extremely scarce and local on coasts. Single-brooded.

ab. unicolor Prout. Entomologist 48 p. 7 I9I5.

A small 2nd. brood form, almost unicolorous dark grey, the cell-spot deep black; very faint indications of some of the principle markings discernible with close attention. Belongs to innotata.

ab. rotundata Bastelberger. Int. Ent. Z. 2 p. 98 1908.

Forewings less elongate, with definitely rounded apex; discocellular and median vein blackened.

gen. aest. suspectata Dietze. Stett. Ent. Z. 32 p. 210 I87I.

= prunata Gillmer. Arch. Freunde Naturgesch. Mecklenb. 75 p. 6 I922.

Small, and on the average more weakly marked, specimens of the 2nd. brood of innotata.

ab. paupera Dietze. Biol. Eup. I9I3 p. I27 pl. 75 f. 488, pl. 85 f. 955.

The ground colour blackish, the markings almost wanting.

ab. grisescens Petersen. Iris 22 p. 27I I909.

= petersenaria Whukowsky. Zool. Anz. 1929. 83 p. 223

Bluish-grey with scarcely a trace of the brownish tint.

Possibly racial.





sobrinata Hbn. aberrational forms etc.

ab. *expressaria* Herrich-Schaffer. Syst. Bearb. 3 p. 121 Geom. f. 284 1848.  
The median area of the forewing sharply marked, the boundaries darkened.

ab. *confluens* Dietze. Biol. Eup. 1913 pl. 77 f. 690.  
= *conjuncta* Dietze. Biol. Eup. 1913 p. 146 pl. 77 f. 690.  
The median area of the forewing almost entirely darkened.

ab. *nigrofasciata* Dietze. Biol. Eup. 1913 p. 146 pl. 77 f. 689.  
The median area of the forewing completely blackened.

ab. *luneburgensis* Dietze. Biol. Eup. 1910 pl. 77 f. 679-680.  
Small, dark and weakly marked.

ab. *achromata* Dannehl. Ent. Z. 41 p. 284 1927.  
Light form,; white-grey, the markings considerably reduced, in extreme examples almost obsolete.

ab. *rittiehi* Dioszeghy. Verh. Siebenburg Ver. Naturw. 79-80 p. 263  
Reddish-grey, median band reddish-brown with dark brown costal and postmedian maculation.  
Similar to *confluens* and *nigrofasciata* but brighter colouring.

ab. *impuncta* Lempke. Tijdschr. Ent. 94 p. 253 1951 (descript. vol. 90 p. 147)  
The central spot of the forewing absent.

ab. *albiplaga* Spitz. Verh. zool.-bot. Ges. Wien. 67 p. (48) 1917.  
Described under *sobrinata* but belongs to the species *E. ericeata* Rmb.

race or subsp. *scotica* Dietze. Biol. Eup. 1910 pl. 77 f. 681-2.  
The description is not sufficient -- "A dusted form from Archimore, Scotland." should be almost certainly Aviemore.  
The Scottish race is certainly different from the English, being whitish-grey especially in the median area often forming a whitish roundish spot near the discoidal of the forewing; some specimens are heavily dusted with blackish-grey and look more like English examples, but these are exceptional.  
The name will stand for the Scottish specimens as a race but Lempke treats it as an aberration occurring in Holland.

race or subsp. *anglicata* Herrich-Schaffer. Corr.-Blatt. Z.-M. Ver. 17 p. 23 1863.  
= *stevensata* Webb. Proc. S. Lond. Ent. Nat. Hist. Soc. 1892 p. 56.  
A whitish-grey form of distinct appearance from Kent coast.

ab. *nigra* Lempke. Tijdschr. Ent. 94 p. 252 1951.  
Unicolorously blackish, central spot of forewings clearly visible.

ab. *altenaria* Staudinger. Stett. Ent. Z. 22 p. 401 1861.  
Very weakly marked, sometimes almost unicolorous.

ab. *nigrofasciata* Dietze. Biol. Eup. 1910 pl. 78 f. 755.  
Median area of the forewing darkened.

ab. *nigronotata* Dietze. Biol. Eup. 1910 pl. 78 f. 754.  
= *notata* Dietze. Biol. Eup. 1913 p. 138.  
The cell-spots, especially that of the forewing unusually large.  
Dietze separated those with prominent discoidals on all wings as *nigronotata* and those with such on forewings only as *notata*. These can be treated as separate aberrations if thought necessary.

ab. *bistrigata* Dietze. Biol. Eup. 1913 p. 138 pl. 78 f. 749.  
Median area of the forewing bounded by dark lines.

gen. aest. *aestiva* Dietze. Biol. Eup. 1910 pl. 78 f. 756-7.  
Summer generation, considerably smaller.





Geom. I89.

*Eupithecia* Curt.

*abbreviata* Stephens. aberrational forms etc.

ab. *hirschkei* Bastelberger. Int. Ent. Z. 2 p. 98 1908.

The ground colour darkened, more grey than yellow-brown so that the markings do not stand out.

ab. *striata* Lempke. Tijdschr. Ent. 94 p. 252 1951.

Forewings pale grey with darker nervures, central spot distinct, costa darker, transverse lines very distinct.

ab. *nigra* Cockayne. Ent. Rec. 65 p. 167 1953.

All parts black with markings on the wings almost obliterated.

Geom. I90.

*dodoneata* Guen. aberrational forms etc.

ab. *approximata* Lempke. Tijdschr. Ent. 94 p. 253 1951. (descript. vol. 90 p. 147)

The two transverse lines which border the central area of the forewings are close together.



Geom. I9I.

Eupithecia Curt.

lariciata Freyer. aberrational forms etc.

ab. nigra Prout. Entomologist 48 p.7 I9I5.

Uniformly sooty black, with deeper black cell-spots and veins.

ab. ferrearia Nitsche.

Strongly darkened with iron-grey.

ab. uniformis Dietze. Biol. Eup. I9I3 p. I55 .

So destitute of markings that scarcely anything but the dark cell-spot remains.

ab. luxuriosa Dietze. Biol. Eup. I9I3 p. I55.

Much more copiously marked than usual.

ab. mediofasciata Dietze. Biol. Eup. I9I3 p. I55.

Median area of the forewing darkened.

ab. basifasciata Dietze. Biol. Eup. I9I3 p. I55 pl. 78 f. 736. (bifasciata in Spitz, error)  
The entire basal half of the wing, as far as the cell-spot, darkened.

ab. mediopallens Dietze. Biol. Eup. I9I3 p. I55 pl. 78 f. 733.

Median area of the forewing, from the cell-spot outwards, broadly paler.

ab. strigata Dietze. Biol. Eup. I9I3 p. I55 pl. 78 f. 734.

Middle field brightened. Recalls E. egenaria H.-Sch.

ab. virgata Cockayne. Ent. Rec. 65 p. I68 pl. I2 f. 2 I953.

Median and postmedian lines are strongly developed, closer together than usual, and united at the costa; the space between them is largely filled with dark scales in the posterior part.

Geom. I92.

millefoliata Rossl. aberrational forms etc.

ab. uniformis Dietze. Biol. Eup. I9I3 p. I06. pl. 85 f. 990.

The markings and ground colour of the same shade making the wings unicolorous sepia-grey, only the cell-spot remaining conspicuous.



Geom. 193.

*Eumithocia* Curt.

*tantillaria* Bsd. aberrational forms etc.  
= *pusillata* Hbn.

*ab. nigricata* Vorbrodt.

Blackish-grey, sharply marked.

*ab. pallida* Lempke. Tijdsch. Ent. 94 p. 255 1951.

Ground colour whitish-grey, forewings with sharp markings, outer margin of fore and hindwings not darkened.

*ab. piccata* Prout. Seitz 4 p. 297 1915.

= *subumbrata* Dietze. Biol. Eup. 1913 p. 155.

Lighter ground-colour, sometimes showing a tinge of greenish or reddish.

*ab. mediopallens* Silbernagel. Acta Soc. Ent. boh. 40 p. 7 1943.

Geom. 194.

*Gymnoscelis* Mab.

*pumilata* Hbn. aberrational forms etc.

*ab. nigrostriata* Dietze. Biol. Eup. 1910 pl. 69 f. 15, 16 & 19.

Inner and outer boundaries of the median area standing out as dark stripes.

*ab. nigrofasciata* Dietze. Biol. Eup. 1910 pl. 69 f. 18.

The entire interior of the median area blackened.

*ab. tenebrata* Dietze. Biol. Eup. 1910 p. 69 f. 20.

Both wings almost wholly dark, only fragments of the ground colour remaining.

*ab. incertata* Killiers. Cat. raison. d. Lepid. Alpes Marit. 3 p. 410

The numerous fine dark transverse markings are more coalesced into broader dentate bands. Dietze links this with the form *tempestivata*, Coll.

*ab. bucovinata* Hormuz.

Lighter ground colour, ash-grey, almost silver-grey, all the light lines broader, pure white and sharply defined.

*ab. parvularia* Herrich-Schaffer. Syst. Bearb. 3 n. 140 fig. 187 1848.

Dwarf form.

*ab. tempestivata* Zeller. Isis 1847 n. 502.

Greyer, less red-marked.

*ab. obsolescens* Richardson. Ent. Rec. 64 p. 271 1952. pl. II f. 9.

Basal two thirds of all wings almost devoid of markings. Postmedian band and terminal markings strongly pronounced.

*ab. contrastata* Lempke. Tijdschr. Ent. 94 p. 256 1951.

The dark markings normal but black-brown, sharply contrasting.

*ab. albescens* Lempke. Tijdschr. Ent. 94 p. 256 1951.

Basal and central area of the forewings whitish.

*ab. puncta* Lempke. Tijdschr. Ent. 94 p. 256 1951.

Forewings with distinct central spot.





Geom. 195.

*Chloroclystis* Hbn.

*coronata* Hbn. aberrational forms etc.

ab. *bistrigata* Lemke. Tijdschr. Ent. 94 p. 256 1951.

Central area of the forewings bordered on both sides by a complete dark line.

Geom. 196.

*debiliata* Hbn. aberrational forms etc.

ab. *nigropunctata* Chant. Ent. Mag. I p. 124 1833.

Only the principal lines present, these being marked as strong vein-dots.

ab. *mediofasciata* Dietze. Biol. Zup. 1913 n. 21 p. 185 f. 902.

Median area of the forewing darkened.

ab. *obscurivireseens* Lemke. Tijdschr. Ent. 94 p. 258 1951.

Ground colour dark green.

ab. *grisea* Dietze. Biol. Zup. 1913 p. 22.

= *clerci* Krulik. Bull. Soc. Ouralienn. Ekaterinenburg. 12, p. 80, 1891. (name rejected by Author)

Silver-grey without a tinge of green.

ab. *albescens* Cockayne. Ent. Soc. 65 p. 168 1951.

Ground colour very pale, whitish with a slight tinge of green; all normal markings present, very pale grey with a slight sandy tinge, but scarcely discernible. Abundant.



rectangulata L. aberrational form etc.

*effusa*

ab. ~~rectangulata~~ *effusa* Coquillett. Ent. Res. 65 n. 168 pl. 12 f. 4 1955.

Median area narrow and darkened, clearly bounded by the antemedial and postmedial lines with the discoidal spot situated in the latter; the marginal area is also darkened, but all the narrow transverse lines are absent and it has a subterminal appearance. Just external to the discoidal spot is a whitish mark ill-defined externally.

ab. *bistrigata* Dietze. Biol. Sup. 1913 p. 21 pl. 85 f. 901.

Ante and postmedian lines of the forewing considerably strengthened.

ab. *subaerata* Lubner. Samml. Eur. Schmiedt. 1809-13 pl. 90 f. 455.

The black markings are reduced, only the ante and postmedian lines developed.

ab. *cydoniata* Borkhausen. Naturg. Eur. Schmiedt. 5 n. 354 1794.

The black is increased, particularly in the median area.

ab. *nigrosescentata* Haworth. Linn. Brit. 1809 p. 363.

= *bischoffaria* Lubner. Samml. Eur. Schmiedt. 1808 pl. 112 f. 386-88.

Is almost entirely black.

ab. *anthrax* Dietze. Biol. Sup. 1913 pl. 69 f. 51.

Completely black, with no pale lines, even the subterminal is absent.

ab. *brunnata* Dännehl. Ent. 1. 41 n. 313 1927.

The ground colour light brown instead of green. From bred specimens.

ab. *ochrea* Jerome. Lambillionea 32 p. 156 1932.

The ground colour ochre-yellow.

ab. *joannisata* Culot. Geom. 2 n. 43 pl. 44 f. 907 1919-20.

Bright green with black-brown median band.

ab. *griseosceas* Lempke. Tijdschr. Ent. 94 p. 457 1951.

The ground colour of the wings gray, not green.

The name "*griseata*" of Staudinger appears uncertain as to its correct meaning, so Lempke has given the name *griseosceas* to the grey form of this present species.

ab. *mediospoliata* Schwingenschuss. Linn. Ent. Ges. 59 n. 177 1954.

The outer border line of the middle field begins at the costa before the middle of the wing, therefore moved 4 mm. inwards, and then bends sharply towards the outer side of the middle of the wing and from there goes at right angles to the middle of the inner margin.



sparsata Tr. aberrational forms etc.

ab. obscura Lempke. Tijdschr. Ent. 94 p. 259 1951.

Ground colour of the wings black-brown.

ab. nigricata Bretschneider. Z. wien Ent. Ges. 36 p. 22 1951.

Deco black, only in the male the yellowish rump-tuft remains.





Geom. 199.

Coenocalpe Hbn.

lapidata Hbn.

aberrational forms etc.

Geom. 200.

Horisme Hbn.

vitalbata Schiff. aberrational forms etc.

ab. variegata Staudinger.

Ground colour pale, the median band very dark and broad.

ab. repedata Prout. Seitz 4 Suppl. p. 213 1938.

More uniformly brown than type, the anterior stripe being much less pale, the oblique band not sharply darkened.

This may prove to be a Spanish race.



tersata Schiff. aberrational forms etc.

ab. riedingeri Lederer. Int. Ent. 3.27 p.278 fig. 1933.

Bone coloured and more or less weakly marked.

ab. nigrofasciata Djakonov.

The ante and postmedian lines of the forewing deep velvety black, the former thickened on the veins, the latter sharply dentate; the postmedian of the hindwing likewise strengthened.

ab. brunnea Chalmers-Hunt. Entom. 1961.94. p.284. pl.7 f.II.

Fore and hindwings deep brown with greyish-brown markings.

atrata L. aberrational forms etc.

ab. nigerrima Thiery-Meig. Le Nat. 32 p.47

The white apex and apical fringe are absent.

ab. denigrata Prout. Seitz 4 suppl. p.4 1934. (See Entom. 21 p.22 1888.)

Nearly white.

ab. perfusca Dannehl. Ent. 2.40 p.463 1927.

The black ground colour sprinkled over with light yellowish-grey atoms.



grossulariata L.

## Index.

aberdoniensis Raynor.	5.	eremodisca Raynor.	9.
actinota Raynor.	10.	exquisita Raynor.	10.
albipalliata Raynor.	4.	exquisita-aenea Raynor.	10.
albispatiata Raynor.	4.		
albomarginata Raynor.	6.	flavipalliata Raynor.	1.
albovarleyata Porritt.	9.	flavofasciata Huene.	8.
alona Thiery-Meig.	2.	formosa Cockayne.	7.
angustifasciata Raynor.	9.	fractifasciata Raynor.	9.
antemarginata Raynor.	4.	fulvapicata Raynor.	2.
ardana Thiery-Meig.	8.		
aureofasciata Porritt.	2.	gloriosa Raynor.	8.
aureomarginata Cockayne.	6.		
aureopicta Cockayne.	3.	hazeleighensis Raynor.	3.
aurivestita Cockayne.	3.		
axantha Raynor.	2.	igneofasciata Raynor.	2.
		impunctifasciata Onslow.	4.
		infrabifasciata Raynor.	2.
candida Raynor.	7.	infraciata Raynor.	2.
centralipuncta Raynor.	8.	infraguttata Cockayne.	2.
chalcobares Raynor.	5.	inframaculata Stovin.	3.
chalcostrota Cockayne.	1.	iochalca Raynor.	1.
chalcozona Raynor.	8.		
chrysostrota Raynor.	1.	lactea-nigra Raynor.	9.
cliftoniana Raynor.	7.	lacteosparsa Raynor.	8.
continua Lempke.	4.	lacticolor Raynor.	8.
crocea Raynor.	10.	lacticolor-lutea Raynor.	1.
cuneata Raynor.	6.	lacticolor-radiata Raynor.	1.
cuneifera Warren.	8.	latifasciata Raynor.	9.
cupreofasciata Raynor.	2.	latilimbata Cockayne.	6.
		leucomelaina Cockayne.	5.
deleta Cockerell.	8.	leucosticta Raynor.	10.
diluta Lempke.	9.	lilacifasciata Cockayne.	2.
dohrnii Koenig.	8.	lilacina Cockayne.	1.
		lunulata Porritt.	2.





<i>lutea</i> Cockerell.	1.	<i>nigrovelata</i> Cockayne.	5.
<i>lutea-varleyata</i> Porritt.	9.	<i>nigrovenata</i> Raynor.	8.
<i>luteovenata</i> Lempke.	1.		
<i>lutescens</i> Lempke.	1.	<i>obscura</i> Cockerell.	9.
		<i>odersfeltia</i> Porritt.	3.
<i>magnipuncta</i> Lempke.	7.	<i>ovalidisca</i> Cockayne.	4.
<i>malmundariense</i> Donckier.	6.		
<i>mediofasciata</i> Lempke.	2.	<i>paucisignata</i> Lempke.	8.
<i>melanapicata</i> Porritt.	5.	<i>pernigrata</i> Thiery-Meig.	9.
<i>melanoneura</i> Cockayne.	6.	<i>postfimbriata</i> Cockayne.	6.
<i>melanozona</i> Raynor.	7.	<i>postmarginata</i> Raynor.	4.
<i>mixta</i> Porritt.	3.	<i>privata</i> Cockayne.	7.
		<i>pulchra</i> Raynor.	10.
<i>nanata</i> Lambillion.	9.	<i>pulchra-aenea</i> Raynor.	10.
<i>nigra</i> Porritt.	5.	<i>purifasciata</i> Raynor.	9.
<i>nigra</i> Raynor.	5.		
<i>nigralbata</i> Cockayne.	7.	"Q"-form, see <i>paucisignata</i> Lempke	8.
<i>nigricostata</i> Raynor.	2.		
<i>nigroapicata</i> Raynor.	5.	<i>radiata</i> Raynor.	6.
<i>nigrocaerulea</i> Raynor.	5.	<i>radiorversa</i> Cockayne.	7.
<i>nigrocincta</i> Onslow.	3.	<i>raynori</i> Porritt.	3.
<i>nigrocingulata</i> Cockayne.	2.	<i>rubrolutea</i> Raynor.	1.
<i>nigrocetacea</i> Raynor.	10.		
<i>nigrofasciata</i> Raynor.	2.	<i>sebaria</i> Cockayne.	8.
<i>nigrofusa</i> Raynor.	8.	<i>semilutea</i> Raynor.	1.
<i>nigrolineata</i> Raynor.	5.	<i>seminigra</i> Cockayne.	10.
<i>nigrolutea</i> Raynor.	5.	<i>semiviolacea</i> Raynor.	5.
<i>nigropalliata</i> Cockayne.	3.	<i>sexstrigata</i> Cockayne.	4.
<i>nigroradiata</i> Rebel.	6.	<i>sparsata-hazeleighensis</i> Porritt.	5.
<i>nigrosparsata</i> Raynor.	5.	<i>sparsata-varleyata</i> Porritt.	9.
<i>nigrotincta</i> Raynor.	5.	<i>striata</i> Cockayne.	8.
<i>nigrovarleyata</i> Porritt.	9.	<i>subangulata</i> Raynor.	4.



subviolacea Raynor.	5.
supralutea Raynor.	1.
unilineata Cockayne.	6.
varleyata Porritt.	9.
vauata Porritt.	3.
venusta Cockayne.	4.
xantha Raynor.	9.





## grossulariata L. aberrational forms.

ab. lutescens Lempke. Tijdschr. Ent. 94 n. 262 1951.

Ground colour of the wings pale yellow.

ab. lutea Cockerell. Entomologist 22 n. 2 1889. (Entom. 20 n. 278 1887.)

The ground colour yellow throughout.

ab. semilutea Raynor. Ent. Rec. 22 p. 240 1910.

Forewings yellow as in ab. lutea Cockerell, the hindwings pure white.

ab. lilacina Cockayne. Ent. Rec. 61 p. 33 1949.

Ground colour entirely violaceous or greyish-violet with a tinge of pale yellow, the latter however can be absent.

ab. flavipalliata Raynor. Ent. Rec. 21 n. 272 1909.

Forewings with a broad luteous area (like a mantle) intervening between the black basal blotch and the discal spot, the area outside the latter being frequently much blackened. Similar to albipalliata Rayn., one of the parents being ab. lutea Ckll.

ab. rubrolutea Raynor. Ent. Rec. 21 p. 272 1909.

All wings entirely suffused with bright reddish-orange. A glorified form of lutea Ckll.

ab. iochalca Raynor. Ent. Rec. 21 p. 271 1909.

Ground colour entirely suffused with bronze-violet, varying somewhat in intensity.

ab. chrysostrota Raynor. Ent. Rec. 21 p. 271 1909.

Ground colour entirely suffused with gold. Parents laticolor and lutea.

ab. chalcostrota Cockayne. Ent. Rec. 61 p. 33 1949.

The ground colour entirely suffused with bronze-violet as in ab. iochalca Rayn. which was peculiar to ab. dohrnii (laticolor). The present form is for any other form of grossulariata; the violet varies in intensity in different individuals, and in the most intense examples there are frequently asymmetrical areas on the hindwings which lack the orange colour of lutea.

ab. supralutea Raynor. Compendium 1920 . . 5.

Form of dohrnii in which the forewings are suffused with yellow, the hindwings remaining creamy.

ab. luteovenata Lempke. Tijdschr. Ent. 94 p. 263 1951.

In the central area of the forewings the nervures and the area between cell and costa are pale orange.

ab. laticolor-radiata Raynor. Ent. Rec. 25 . . 288 pl. 23 f. 1 1915.

Ground colour of forewings luteous; hindwings creamy white; median band pale yellow; the marginal spots of the forewings radiated. Belongs to dohrnii.

ab. laticolor-lutea Raynor. Ent. Rec. 25 p. 288 . . 23 f. 2 1915.

Ground colour of all wings luteous; median band pale orange. Belongs to dohrnii.





ab. *azantha* Raynor. Ent. Rec. 15 p. 9 1903.

The yellow transverse bands of the forewing are either obsolete or so faintly and slight as to be hardly noticeable.

ab. *fulvapicata* Raynor. Ent. Rec. 15 p. 10 1903.

The fulvous colour at the top of the central band extending over the pale area at the apex of the forewings.

ab. *cupreofasciata* Raynor. Ent. Rec. 21 p. 272 1909.

The fascia of the forewings copper-coloured.

ab. *igneofasciata* Raynor. Ent. Rec. 21 p. 272 1909.

The fascia of the forewings fiery-red.

ab. *nigrofasciata* Raynor. Ent. Rec. 21 p. 272 1909.

Forewings with a broad central black fascia containing little orange or yellow.

ab. *infraciata* Raynor. Ent. Rec. 21 p. 272 1909.

With a central row of black spots on upperside of hindwings coalescing into a more or less complete band.

ab. *infrabifasciata* Raynor. Ent. Rec. 21 p. 272 1909.

Similar to the preceding but with an extra black band above the central one.

ab. *mediofasciata* Lempke. Tijdschr. Ent. 94 p. 267 1951.

A continuous black band running across the central area of the forewings from costa to inner margin. This band is in addition to the normal fascia.

ab. *aureofasciata* Porritt. Ent. Mon. Mag. 56 p. 100 1920.

The yellow fascia of the forewing very broad, of a deep golden yellow, of uniform width and extending from costa to inner margin, bordered outwardly with a series of short black streaks; then follows the usual white space to the marginal row of very small black dots. The orange basal line is exaggerated into a large blotch without the black margin. Hindwings almost pure white with the exception of four or five minute marginal black dots.

ab. *lilacifasciata* Cockayne. Ent. Rec. 61 p. 34 1949.

The fascia of the forewing instead of orange is lilac-grey.

ab. *nigricostata* Raynor. Ent. Rec. 21 p. 271 1909.

With a broad black stripe extending along about three quarters of the costa, more rarely reaching the apex. The other black markings being much reduced the costal stripe shows up very conspicuously.

ab. *alona* Thiery-Meig. Ann. Soc. Ent. Belg. 54 p. 384 1910. (fig. Icon I pl. I Milliere)  
The figure shows a *nigricostata* form with the central orange fascia almost absent (*nigrofasciata*). The hindwings are exceptional, showing a very broad, inwardly dentate, suffused margin.

ab. *lunulata* Porritt. Ent. Mon. Mag. 56 p. 99 1920.

Forewings wholly black with the exception of a narrow white fascia, or more usual partial fascia, of irregular shape outside the basal black band; a narrow white band inside spots of the outer margin; a conspicuous white lunar mark towards the costa in the middle of the central black area which contains practically no yellow. This mark in different specimens represents the moon in all its phases, quarter, half or full moon. Hindwings with, besides the marginal row of black dots two uniformly very broad black bands, which usually have one or more crescentic irregularities, the apices of the crescents pointing outwardly.

ab. *infraguttata* Cockayne. Ent. Rec. 61 p. 34 1949.

On the hindwing the antemedian row of spots forms a continuous black band; the spots of the postmedian row are elongated into streaks running towards the antemedian and sometimes reaching it, or the streaks may be short and followed by a line of dots; sometimes there are additional dots running towards the margin.

ab. *nigrocingulata* Cockayne. Ent. Rec. 58 p. 94 pl. 2 f. II 1946.

A complete black median band extending outwards from just beyond the discoidal spot, to obscure the orange fascia.





ab. *hazleighensis* Raynor. Ent. Rec. 15 p. 10 1903.

The whole area of the forewings between the two orange bands is filled in with brown-black, the only white markings in this area being two minute white specks on the costal margin (about the middle). Median band of a deep orange, and broader where it meets the inner margin.

ab. *nigropallata* Cockayne. Ent. Rec. 63 p. 105 1951. (fig. Barrett. pl. 321 f. 1 G.)

With the exception of one or two insignificant white or orange dots the forewing is black from the extreme base to the outer black fascia, which is included in the black area.

ab. *aureopicta* Cockayne. Ent. Rec. 63 p. 105 pl. 3 f. 6 1951.

The ground colour of the forewing from the base to the orange fascia is deep orange; there is a large black band at the base, a broad black band along the costa, which includes the discoidal spot, and a large pear-shaped mark on the inner margin; there are also two or three small black spots in the median area; a fascia formed by a single row of large elongated black spots separates the orange part of the wing from the white marginal area; the marginal spots are normal. Hindwing normal with a single row of black spots evenly spaced.

ab. *nigrocincta* Onslow. Journ. Genetics 8 p. 222 1918. (pl. 9 f. 16 & 30.)

Black rings encircling the abdomen instead of dorsal spots.

ab. *odersfeltia* Porritt. Ent. Mon. Mag. 56 p. 101 1920.

Forewing with a broad black band extending from the base along the costa as far as the usual yellow fascia, and in the middle of the wing immediately below the black costal band is a black spot. In extreme forms the space between the costal band and the inner margin is pale yellow, but in some specimens the black of the costal band swells as a large black blotch at the base to the inner margin. Outside the yellow area the markings are normal, as they are also on the hindwing. The form although very distinct has a somewhat washed-out appearance.

ab. *vauata* Porritt. Ent. Mon. Mag. 56 p. 101 1920.

Forewings more or less normal, but in the hindwings the middle band of spots take the form of strong black streaks, a pair of the streaks, in one case two pairs, taking the form of a large and prominent V, the apex of which points to the base of the wing.

ab. *inframaculata* Stovin. Entomologist 72 p. 154, 155 pl. 3 f. 4 1939.

The hindwings are the most characteristic feature of this form. The usual spots are replaced by a series of heavy black blotches, usually arranged in two parallel rows. In outline these markings are irregular, and vary somewhat in number, size and shape in different individuals. Forewings with the yellow median fascia unusually wide and well marked. The row of subterminal spots on the outer side is replaced by a series of wedge-shaped blotches. The central fascia of the forewing is divided into two white, triangular areas by three horizontal and almost parallel heavy black lines, which coalesce at their extremities to form the inner and outer boundaries of the basal and median yellow fasciae respectively. The discoidal spot is large, and can usually be recognised at the base of the upper white triangle left in the central fascia.

ab. *raynori* Porritt. Ent. Mon. Mag. 56 p. 100 1920.

Superficial resemblance to *hazleighensis* Rayn. but the basal black portion of the forewings does not extend so far outwardly. It is followed by a broad orange band of uniform width from the costa to inner margin, bordered with large black marks, and followed by an exceptionally broad white space to the usual row of marginal spots. Hindwings with the black spots unusually large, and situated much nearer to the base than in ordinary specimens, leaving a broad space of white between them and the marginal black spots.

ab. *aurivestita* Cockayne. Ent. Rec. 46 p. 117 1934.

The two rows of postmedian black spots, which usually enclose an orange fascia are confluent and form a single band, and the whole of the ground colour of the forewing proximal to this band is deep orange. The black spots on the hindwings are elongated to a varying degree.

ab. *mixta* Porritt. Ent. Mon. Mag. 56 p. 101 1920.

Somewhat of the character of *odersfeltia* Porritt, but the broad black costal band is broken up with two white spots. Yellow fascia broad from costa to inner margin and just above inner margin is extended though to the base. All markings are clear.





ab. *imunctifasciata* Unslow. Journ. Genetics. 8 p. 221 pl. 9 f. 21 & 24 1918.

The postmedian black band of spots outside the yellow fascia of the forewing is wholly or in part, obsolete.

ab. *subangulata* Raynor. Ent. Rec. 35 p. 141 1923.

Beneath the disc of the forewing is a black angular or elbowed line varying in intensity, but very distinct.

Often united with the discoidal spot.

ab. *continua* Lempke. Tijdschr. Ent. 94 p. 266 1951. ( pl. 48 f. 7. )

The spots on the inner side of the yellow fascia united into one continuous black band.

ab. *sexstrigata* Cockayne. Ent. Rec. 63 p. 105 pl. 3 f. 7 1951.

On the forewing there is a black fascia with an orange fascia external to it and another black fascia bordering the orange one externally; there is a complete and conspicuous black fascia in the median area running through and including the discoidal spot starting at the costa and ending at the inner margin; the black fascia internal to the orange one is complete, and external to the orange fascia there is a row of rather large black spots; the marginal spots are large. Thus there are six fasciae in this form and it resembles what I believe to be the ancestral pattern of the species more closely than any other I have seen. Hindwing with a large black spot at the extreme base, than a broad and complete black fascia, and distal to this a row of black spots with an orange fascia external to it; the marginal spots are large.

ab. *albipalliata* Raynor. Ent. Rec. 21 p. 272 1909.

Forewings with a broad white area, like a mantle, intervening between the black basal blotch and the discoidal spot, the area outside the latter being frequently much blackened.

ab. *antemarginata* Raynor. Ent. Rec. 35 p. 140 1923.

Forewings with a black marginal band, 3 mm. broad in the actual specimen described, decreasing to 2 mm. in its lower half, extending from apex to tornus and replacing the usual black marginal spots.

ab. *postmarginata* Raynor. Ent. Rec. 35 p. 140 1923.

Hindwings with a broad black band, similar to the preceding *antemarginata* in which it occurs on the forewings.

ab. *venusta* Cockayne. Ent. Rec. 63 p. 102 pl. 3 f. 1 1951

Forewing with the black basal markings large; in the median area there is a large black mark on the costa united to the discoidal spot and two or three spots nearer to the inner margin; the black fascia internal to the orange fascia is broad and only broken at one point, the orange fascia is broad and clear, and external to it there is only a single black spot near the inner margin; there is an elongated subapical black mark on the costa and the black spots on the margin are all united to form a continuous band. Hindwings with a large discoidal spot, a complete row of black spots, and the spots on the margin are large and united to one another. Paratypes less extreme.

ab. *albispatiata* Raynor. Ent. Rec. 21 p. 272 1909.

Forewings with a broad white area between the central fascia and the outer margin.

ab. *ovalidisca* Cockayne. Ent. Rec. 63 p. 104 pl. 3 f. 3 1951.

Forewing with basal spots very large; the black antemedian fascia is very broad and forms an unbroken band; the postmedian fascia lying internal to the orange fascia is also unusually broad and only narrowed at one point; there is no black spot on the costa in the median area and the discoidal spot is elongated and oval; the submarginal fascia which lies external to the orange fascia is unusually broad in the first five interneural spaces, there is a small black dot in the seventh, and two rather large black spots in the last two spaces near the inner margin; the marginal spots are large and confluent and the third and fourth are united to the submarginal fascia. The normal orange of the thorax, abdomen and fascia is replaced by pale yellow. On the hindwing there is an elongated oval discoidal spot, a row of postmedian spots, and a single rather large spot on nervure 4 belonging to the submarginal row; some of the marginal spots are confluent.



ab. nigrolutea Raynor. Ent. Rec. 19 p. 81 1907.

Ground colour of a lovely bright canary yellow, intermediate between the ordinary dull slightly luteous form and the deep gamboge one figured by Barrett. Forewings with the black markings so exaggerated as to cover about two thirds (in one specimen three quarters) of the wings.

ab. subviolacea Raynor. Ent. Rec. 15 p. 10 1903.

Markings normal, but the whole area of all four wings suffused with dusky or brownish-violet, often producing a scorched appearance.

ab. semiviolacea Raynor. Ent. Rec. 15 p. 10 1903.

Similar to the preceding but the hindwings not suffused with dusky or brownish-violet.

ab. nigrosarsata Raynor. Ent. Rec. 15 p. 10 1903.

Markings more or less normal but the wings suffused with minute black specks, producing a sooty appearance. Median band generally faint, and of a dull orange.

ab. sparsata-hazeleighensis Porritt. Ent. Mon. Mag. 56 p. 102 1920.

This form is ab. hazeleighensis with the white parts densely spotted or blotched with intense black.

ab. nigrocaerulea Raynor. Ent. Rec. 21 p. 272 1909.

A blue-black form of nigrosparsata, very thickly dusted on all wings, but with white interspaces between the black costal blotches and between the black outer-marginal spots on both wings.

ab. nigrotincta Raynor. Ent. Rec. 22 p. 240 1910.

All wings tinged with pale black.

ab. chalcobares Raynor. Ent. Rec. 19 p. 84 1907.

The area between the base and central fascia thickly laden with bronze but the area external to the fascia normal white. Hindwings are as black as any nigrosparsata and have the central horizontal row of black spots slightly flushed with bronze.

ab. nigra Raynor. Ent. Rec. 21 p. 272 1909.

= nigra Porritt. Ent. Mon. Mag. 48 p. 215 1912.

Pure black on all wings.

ab. nigrovelata Cockayne. Entomologist 72 p. 154 pl. 3 f. 2 1939.

Except for a small orange patch at the extreme base, the whole of the forewing, as far as and including the black spots outside the orange fascia, is black, through which the usual black markings are faintly visible. The hindwing as far out as the outer line of black spots is thickly covered with black spots, which in part may be confluent. The aberration varies considerably.

ab. nigrolineata Raynor. Ent. Rec. 35 p. 140 1923.

On the forewings is a broad horizontal black line, varying in width from 1 to 2 mm uniting the discoidal spot to the basal blotch.

ab. aberdoniensis Raynor. Ent. Rec. 35 p. 140 1923.

Forewings much clouded with black, but having constantly a large irregular oblong patch of white adjoining the black basal blotch on the inner margin.

ab. leucomelaina Cockayne. Ent. Rec. 63 p. 105 pl. 3 f. 5 1951.

Forewing entirely black with the exception of a very small white mark two thirds of the way along the costa, a still smaller one at the apex and a few white dots parallel with the termen, the remains of the white marginal area. Hindwing with black discoidal spot, irregular elongated black markings in the basal half and a long black streak along the inner margin; the marginal spots are large and confluent forming a complete black border and the third spot from the apex extends inwards as a thick black streak.

ab. melanapicata Porritt. Ent. Mon. Mag. 57 p. 135 1921.

= nigroapicata Raynor. Ent. Rec. 35 p. 140 1923.

At the apex of the forewing is a black blotch, 5 mm. long by 3 mm. broad in the Type extending from the apex to the black median band. It thus contrasts strongly with ab. fulvapicata in which the apical blotch is fulvous. This is Raynor's description. Porritt's melanapicata had the apex entirely filled with a large squarish blotch of black and this name has priority.





ab. radiata Raynor. Ent. Rec. 21 p. 272 1909.  
With the marginal spots on the forewings radiated.

ab. euneata Raynor. Ent. Rec. 21 p. 272 1909.

On the forewings there is a wedge-shaped horizontal black stripe joining the seventh outer marginal spot to the central fascia. It also has a similar but less complete stripe extending from the third outer marginal spot to the central fascia.

ab. nigroradiata Rebel. Hofm.-Spuler Schmëtt. Eur. 2 p. 88 1904.

(fig'd Hoffmann Gr. Schmëtt. pl. 55 f. 4.)

The figure shows black horizontal lines or bars uniting the black fascia of the forewing with the outer margin over its whole width. The black fascia is in the form of a single transverse stripe with no orange accompanying it. The usual basal markings are almost absent, only amounting to a few black spots on the costa; between these and the discoidal spot are two black spots, no other markings are present. Hindwing with black margins and rayed inwards half way to the discoidal spot which is present, with two or three small spots near to it.

ab. malmundariense Donckier. Feuille Jeunes Nat. II p. 34 pl. I f. 3 1881.

Similar in some respects to the preceding nigroradiata Rbl. except that the black fascia of the forewing is not complete, finishing half way from the inner margin towards the costa. Also there is some of the yellow of the central fascia on the external side of the fascia. On the hindwings the black margin of the preceding is reduced to a thin line on the inside of which there is a yellow suffused marginal band; there is also some yellow at the base of both wings.

ab. postfimbriata Cockayne. Ent. Rec. 63 p. 106 pl. 3 f. 8 1951.

On the hindwing there is an incomplete row of postmedian spots and a discoidal spot; the marginal spots are very broad, elongated, and confluent, with the exception of the two nearest to the apex, and form a broad black border. Forewings normal except for a black line running from the base to the discoidal spot as in ab. nigrolineata Rayn.

ab. unilineata Cockayne. Ent. Rec. 64 p. 238 pl. 10 f. 14 1952.

Forewing normal except that in the internural space between 4 and 5 the black spot of the outer black transverse fascia is united to the marginal black spot forming a conspicuous black streak.

ab. melanoneura Cockayne. Ent. Rec. 63 p. 104 1951.

Rather heavily marked and all the nervures on the wings are black; the black lines so formed are thick in the proximal part of the wing, but become thinner distally and disappear towards the margin.

ab. latilimbata Cockayne. Ent. Rec. 63 p. 106 pl. 3 f. 10 1951.

Forewing from termen to black fascia entirely black or dusted with black and the black extends along costa to the orange spot near base; the discoidal spot is united with the black costa and a black line runs from it to the inner black fascia; the two black fasciae are to a great extent fused so that the orange fascia between them is almost obliterated. On hindwing the discoidal spot is small, the inner row of black spots is represented by three dots and the spots of the outer row are small; there is a broad black band along the whole of the border broadest near the apex, on the inner side the band is ill-defined ending in small black speckles which tend to form thin streaks.

ab. albomarginata Raynor. Ent. Rec. 15 p. 10 1903.

The series of seven black spots usually found on the outer margins of fore and hindwings are entirely absent. Markings otherwise normal.

ab. aureomarginata Cockayne. Entomologist 84 p. 128 pl. 3 f. I-10 1951.

Superficially resembling albomarginata Rayn. but the latter is more heavily marked, never has an orange discoidal spot and no spots whatever on the margin of either wing.

In aureomarginata the head and thorax are orange, likewise the discoidal spot which sometimes has black scales in the centre; many of the spots on either side of the orange fascia of the forewing are orange instead of black; the marginal spots are replaced by orange ones or small dots surrounded by orange scales.

Hindwing with discoidal spot small and orange, the black spots are reduced in size and number, in some the wing is almost immaculate; all or most of the black marginal spots are replaced by orange or black scales mixed with orange.

In some specimens the head and thorax are normal and the hindwings show more spots





ab. *formosa* Cockayne. Ent. Rec. 63 p. 103 1951. (fig. Barrett pl. 322 f. 1B.) Head, thorax and abdomen are orange with no black markings. Forewing with the base orange with two black dots external to it, a large black mark on the costa in the median area and an orange discoidal spot; just internal to the broad orange fascia is a black spot on the costa and a black dot near the inner margin but no other markings; there are no black spots external to the orange fascia on either wing and no black marginal markings on the right forewing, a small irregular black mark on the left forewing near nervures 3 & 4. Hindwing with no black markings except a spot about the middle of the inner margin on each wing.

ab. *candida* Raynor. Ent. Rec. 15 p. 9 1903. (fig. Mosley. Nat. Journ. 4 p. 32 f. 1. 1895) Entirely white without any black at all.

ab. *cliftoniana* Raynor. Ent. Rec. 15 p. 296 1903. (fig. Mosley. Nat. Journ. 4 p. 32 f. 3.) Ground colour uniform satiny-white, with a very pale tinge of brown, which is barely discernible; costa more distinctly brown; thorax pale yellow, with central part dull brown; abdomen of a rich yellow and entirely without markings. The two yellow fasciae, basal and median, usual in this species are entirely absent, in fact the only markings consist of small round intensely black spots, differing, however, in size, the whole insect thus presenting a most remarkable and, probably, unique appearance.

ab. *melanozona* Raynor. Ent. Rec. 15 p. 10 1903. Striking Scottish form. Forewings with a black basal blotch with the slightest trace of yellow. Discoidal spot very black and large, standing out in the large white central area. On the outside of this area and inside the very faint yellow median band is a black fascia, broader at costal margin. The series of black spots outside the yellow band is reduced to four, which nearly coalesce with the black fascia, and, are therefore, really situate in the yellow band. The seven black spots along the outer margin are strongly developed and confluent. Hindwing with a well defined central black spot and two parallel series of seven strongly marked spots along the outer margin, a definite white area separating the two series.

ab. *radioreversa* Cockayne. Ent. Rec. 63 p. 104 pl. 3 f. 4 1951. On the forewing the black fasciae on either side of the orange fascia are united to form a broad band obliterating the orange and sending out a row of tooth-like processes towards the terminus; there is a broad black band along the costa running from the middle of the wing to the apex and the inner end of this is united to the discoidal spot and continued below to join the broad black fascial band enclosing an irregular white area; there is a black spot in the median area; the marginal spots are normal. On the hindwing the discoidal spot is very large and black; the spots of the postmedian row are greatly elongated, increased in width proximally but becoming narrower distally, and almost reaching the margin, the marginal spots are normal.

ab. *nigralbata* Cockayne. Ent. Rec. 63 p. 106 pl. 3 f. 9 1951. Forewing with an orange spot at extreme base and then a broad black fascia; external to this is a narrow white median area, extending out to the discoidal spot; the whole of the outer part of the wing including the discoidal spot is black with the exception of one or two insignificant white dots and the white lines separating the marginal dots. Hindwing with the basal part white as far out as the discoidal spot; from this point to the margin the wing is for the most part black, the apical part is entirely black and on the rest of the outer part of the wing there are broad black radiations coalescing about the middle and not quite reaching the margin; the white spaces between them are partially filled by black dots and spots; the marginal spots are fused with the apex and normal elsewhere.

ab. *privata* Cockayne. Entomologist 72 n. 154 pl. 3 f. 3 1939. Forewing with the black bands on either side of the orange fascia united to form a narrow continuous band; the orange represented by a light dusting of orange scales on the lower part of the wing, only lying both internal and external to the black band, not in its normal position between the black bands.

ab. *magnipuncta* Lamke. Tijdschr. Ent. 94 p. 266 pl. 48 f. 6 1951. The whole central area of the forewings without or nearly without markings with the exception of the strongly enlarged central (discoidal) spot. ab. *melanozona* shows the same character but differs in having the postdiscal band of the forewings displaced outwards together with a double row of submarginal spots on the hindwing.





ab. sebaria Cockayne. Ent. Rec. 63 p. 103 pl. 3 f. 2 1951.

Forewing with two black spots at the base with an external yellow fascia, but the usual black fascia outside this is absent; a conspicuous round black discoidal spot in the median area, but no other markings; the orange fascia is present, but the usual black fascia internal to it is absent; the row of black spots external to it is present, and the marginal spots are normal. On the hindwing of the Type there is a black subapical spot and an incomplete row of marginal spots, but no other markings are present. In the Paratype there are five very small spots internal to the orange fascia on the left forewing and none on the right. On the hindwing there is a large discoidal spot and some small marginal spots, but no others except an apical spot on the right and one near the anal angle on the left. The most notable feature is the complete or almost complete absence of the black fasciae, which normally form the boundaries of the median area.

ab. paucisignata Lemke. (var. ♀ Woodlock. Journ. Genetics 5 p. 183 pl. 30 f. 4-6 1916)  
Tijdschr. Ent. 94 p. 263 1951.

The markings are much reduced in size with a consequent prominence of the orange fasciae, resembling dohrnii. The markings are somewhat heavier than in dohrnii and are almost as strongly developed on the underside as on the upper surface whilst in dohrnii they are weaker. The ground colour is white in its normal form but creamy or pale yellow specimens are frequent, greatly resembling dohrnii. The chief difference lies in the underside.

ab. dohrnii Koenig. Rev. mens. d'Ent. I p. 20 1883.

= delota Cockerell. Entomologist 22 p. 99 1889.

= flavofasciata Huene. Stett. Ent. 2. 62 p. 158 1901.

= lacticolor Raynor. Ent. Rec. 14 p. 322 1902.

= ardana Thiery-Meig. Ann. Soc. Ent. Belg. 54 p. 384 1910.

The ground colour cream-white. The upperside markings strongly reduced, a number of the spots absent and most others strongly reduced in size. This reduction is still much stronger on the underside, apart from the discoidal spot all the markings have disappeared, the markings of the upperside can to some extent be seen showing through.

ab. nigrovenata Raynor. Ent. Rec. 21 p. 271 1909.

Remarkable for the blackening of the chief veins in the central area of the forewing.

These blackened veins are usually two in number, cutting across the cream ground.

ab. gloriosa Raynor. Ent. Rec. 21 p. 271 1909.

A combination of the preceding nigrovenata and nigricostata which has a broad black stripe extending along about three quarters of the costa.

ab. chalcosona Raynor. Ent. Rec. 15 p. 9 1903.

Similar to dohrnii but the basal blotch and median fascia instead of being pale yellow are of a dead coppery-bronze, the median fascia being very broad and handsome. The hindwings of some specimens show a very faint yellow horizontal stripe starting from a point opposite the anus and extending over two thirds of the wing towards the apex.

ab. cuneifera Warren. Nov. Zool. 2 p. 125 1895.

= centralipuncta Raynor. Ent. Rec. 22 p. 240 1910.

Form of dohrnii in which the costa, instead of having three black blotches, has only one, and that situated above the discal spot. The whole insect thus has a very light appearance especially as the discal spot is, as a rule, strongly developed.

This is the description of centralipuncta but the Type of Warren's cuneifera agrees exactly and his name has priority over Raynor's.

ab. lacteosparsa Raynor. Ent. Rec. 19 p. 84 1907.

Of the dohrnii type of markings. The forewings are densely dusted with blackish-brown on a very pale ground. For a pale form to be thus suffused was, in Raynor's experience, altogether unparalleled.

ab. nigrofusa Raynor. Compendium 1920 p. 4.

The greater part of the forewing clouded with blackish-brown.

Described as form of dohrnii (lacticolor)

ab. striata Cockayne. Ent. Rec. 64 p. 237 pl. 10 f. 13 1952.

Combination of ab. dohrnii and aberdoniensis. In the forewing a heavy pepperling





ab. striata continued.

of black scales along the median nervure from the base to the discoidal spot represents the strong black line found in ab. nigrolineata Rayn. and in all aberdoniensis Rayn., sometimes a similar pepperering along other nervures and along the costa. From the black marginal spots on the termen black internervular streaks with ill-defined edges run to the black spots of the outer transverse fascia, and when the streaks are incomplete there are scattered black scales in the intervening spaces; these represent the solid black streaks seen in the radiated forms of aberdoniensis and are determined by one of the recessive genes of this multifactorial complex. On the hindwing none of the markings are sharply defined except the discoidal spot, and the wedge-shaped marginal spots are bordered by a powdering of black scales.

ab. lactea-nigra Raynor. Ent. Rec. 21 p. 271 1909.

Form of dohrnii with the dark markings of the forewings, and the marginal spots on the hindwings, black.

ab. diluta Lempke. Tijdschr. Ent. 94 p. 269 1951.

The black markings strongly bleached.

The form has a washed out or faded appearance.

ab. nanata Lambillion. Rev. Mens. Soc. Ent. Nam. 7 p. 27 1907.

Dwarf form, only 28 mm.

ab. varleyata Porritt. Trans. Yorks. Nat. Union 1880 pt. 3 p. 75.

= obscura Cockerell. Entomologist 22 p. 55 1889.

= pernigrata Thiery-Moig. Ann. Soc. Ent. Belg. 54 p. 384 1910.

Entirely black except for a narrow white band near the base of the forewing and a rather broader one at the base of the hindwing.

ab. latifasciata Raynor. Compendium 1920 p. 6.

varleyata form with the white band on the forewings double its usual width.

ab. purifasciata Raynor. Compendium 1920 p. 6.

varleyata form without any black specks within the white bands of the forewing.

ab. eremodisca Raynor. Compendium 1920 p. 6.

varleyata with the discoidal large and black, situate in white band of forewings.

ab. angustifasciata Raynor. Compendium 1920 p. 6.

varleyata with the white band of the forewings narrow.

ab. fractifasciata Raynor. Compendium 1920 p. 6.

varleyata with white band interrupted, sometimes considerably, by black in upper half.

ab. nigrovarleyata Porritt. Ent. Mon. Mag. 56 p. 102 1920.

The narrow white band on the forewings of ab. varleyata is obliterated, the wings becoming entirely black. In the hindwings the white remains but is reduced.

ab. sparsata-varleyata Porritt. Ent. Mon. Mag. 56 p. 101 1920.

The white bands of ab. varleyata are filled up with the black spotting of ab. nigrosparsata, in greater or lesser density. In extreme specimens the white is almost obliterated.

ab. lutea-varleyata Porritt. Ent. Mon. Mag. 56 p. 102 1920.

The white parts of ab. varleyata are replaced by yellow of various shades.

ab. albovarleyata Porritt. Ent. Mon. Mag. 53 p. 86 1917.

Differs from typical varleyata in that the hindwings are entirely white with the exception of the veins, and a series of four marginal spots, one between each of the basal wing veins, and a few almost unnoticeable freckles, all of intense black. The forewings, besides the usual white shoulder-band, have a series of seven large oblong-square white marks on the outer margin, separated from each other by black streaks; and there are also two parallel short streaks of white just anterior to the middle of the black central area.

ab. xantha Raynor. Compendium 1920 p. 6.

varleyata form in which the band of the forewing is buff or pale yellow instead of white. Hindwings presumably normal.



ab. *crocea* Raynor. Compendium 1920 p. 6.  
 varleyata with the band of the forewing bright orange.

ab. *leucosticta* Raynor. Compendium 1920 p. 6.  
 varleyata with the black area of the hindwing showing a few tiny streaks of white.

ab. *aetinota* Raynor. Compendium 1920 p. 6.  
 varleyata form with horizontal white wedges ornamenting the outer margins of forewings, hindwings, or both.

ab. *pulehra* Raynor. Ent. Rec. 31 p. 205 1919.  
 varleyata form with the white (or fulvous) band very broad, about twice the width of that in varleyata. The discoidal spot which is large and striking, is situated in a sort of white recess trenching upon the broad black outer marginal band. The latter, on reaching the costa, does not end suddenly as in varleyata, but is continued conspicuously for a short space along the costa inwardly. Another striking difference is that, whereas in varleyata there is no white on the underside except exactly beneath the white fascia on the forewings, it is suffused with white over about two thirds of the wing.

ab. *pulehra-aenea* Raynor. Compendium 1920 p. 6.  
 varleyata form similar to the preceding but has a few bronze radiations on the outer margins.

ab. *exquisita* Raynor. Ent. Rec. 30 p. 189 1918.  
 Forewings with black shoulder-knot at base; then a broad white median band containing a conspicuous black discoidal spot; then a broad black band extending to outer margin, except that it is bordered outwardly with a band of large white cuneate blotches edged with black towards the fringes. Hindwings without black shoulder-knot, with base therefore white, the rest of the wing similar to the forewings.

ab. *exquisita-aenea* Raynor. Ent. Rec. 30 p. 189 1918.  
 Similar to the preceding except that the white markings are suffused with a delicate bronze, the hindwing base however remains white.

ab. *nigrocretaea* Raynor. Ent. Rec. 35 p. 141 1923.  
 Similar to *exquisita* but having the white areas larger and more transparent. On the hindwings the only black markings, besides the discoidal spots, are a faint black transverse band, so broad as to cover about a third of the wing, and a row of small black spots, sometimes forming a narrow band, round the edge of the outer margin.

ab. *seminigra* Cockayne. Entomologist 72 p. 153 pl. 3 f. 1 1939.  
 Ground colour pale yellow; the black at the base is increased, but parts of the orange blotch are visible and the ground deepens to orange near the subcostal nervure. The whole space between the costa and subcostal nervure is black and there are two black dots just inside the cell. The outer part of the wing from a point just proximal to the disc is uniformly black, with the discoidal spot and the usual black markings faintly visible. Hindwing with the outer part uniformly black, but the line demarcating it from the light inner part is not straight, three edges of ground colour extending into it. There is a small black spot on the median nervure, just proximal to the point where 2 is given off, and there are a number of small black dots just internal to the black area. Head, thorax, legs and abdomen are wholly black.





*sylvata* Scop.

= *ulmata* F.

aberrational forms etc.

*ab. suffusa* Tutt. Ent. Rec. 9 p. 307 1897.

= *plumbea* Rebel. Berge's. Schmett. 1910. p. 384. (fig. Barrett. pl. 320 f. 11.)

With the whole of the wings and body suffused with paler or darker slaty-grey.

*ab. intermedia* Tutt. Ent. Rec. 9 p. 307 1897.

With the wings or some part of the wings, irregularly or unequally suffused with slaty-grey patches.

*ab. obscura* Tutt. Ent. Rec. 9 p. 307 1897.

With the wings or part of the wings suffused with dirty ochraceous or brown colour.

*ab. transversa* Tutt. Ent. Rec. 9 p. 307 1897.

With the discoidal and central slaty-grey shades forming a central transverse band across the forewings. See *bifasciata* Hannemann (below)

*ab. nigrescens* Hannemann. Int. Ent. 1. 13 p. 114 1919.

The darkening (blue-grey) reaches the outer margin of the forewing and continues to around the eye-spot. Hindwing sometimes with the spots running out to the middle of the wing and more rarely to the outer margin, specimens with normal hindwings are rarer.

*ab. seminigra* Hannemann. Int. Ent. 1. 13 p. 114 1919.

Forewings as in the preceding *nigrescens* but hindwings entirely darkened with blue-grey from the middle to the margin.

*ab. bifasciata* Hannemann. Int. Ent. 1. 13 p. 114 1919.

Strongly spotted, with a row of dots or an uninterrupted band from the discoidal spot to the inner margin of the forewing.

This must be very similar to Tutt's *transversa*, presumably the spots form a more definite line and are more separated from the postmedian row to form two bands as the name implies.

*ab. guttata* Hannemann. Int. Ent. 1. 13 p. 114 1919.

The discoidal spot of the forewing runs out to form a large drop.

*ab. confluens* Hannemann. Int. Ent. 1. 13 p. 114 1919.

The discoidal spot elongated to the basal field and to the antemarginal row of dots forming a blue-grey horizontal band.

*ab. radiata* Hannemann. Int. Ent. 1. 13 p. 114 1919.

All dots on fore and hindwings radiate towards the outer margins.

*ab. reducta* Hannemann. Int. Ent. 1. 11 p. 62 1917.

All the greyish markings absent.

*ab. pantarioides* Spitz. Verh. zool.-bot. Ges. Wien 58 p. (265) 1909.

The dark markings much reduced, resembling *Abr. pantaria*. A spot in the distal margin, though sometimes much reduced, and the dark head, remain distinctive.

*ab. continuata* Warren. Nov. Zool. 10 p. 269 1903.

Described under *sylvata* but belongs to *A. miranda*.

*ab. rufomaculata* Lempke. Tijdschr. Ent. 94 p. 271 1951.

All the normally brown spots are changed to red-brown.

*ab. fasciata* Lempke. Tijdschr. Ent. 94 p. 271 1951.

The postdiscal row of spots on fore and hindwings united into a continuous band.

*ab. purissima* Cockayne. Ent. Rec. 64 p. 238 pl. 10 f. 10 1952.

On both fore and hindwings the transverse fascia is entirely absent; the only markings on the forewing are the basal blotch, a pear-shaped leaden coloured mark at the discoidal cell, a dot on the costa towards the apex, the blotch with a bluish centre near the anal angle with an oblique brown streak running upwards and outwards from it, and small dark marks on the middle of the termen. Hindwings with the fascia absent, the only markings being the discoidal spot, the dark blotch near the anal angle with a short streak running from it, and three very narrow marginal marks.



ab. circumnotata Cockayne. Ent. Rec. 64 p. 239 pl. 10 f. 11 1952.

On both wings the transverse fascia is displaced outwards and lies close to the margin. On the forewing the basal markings are normal, there is a circular discal spot, and two small marks on the termen.

ab. glomerata Cockayne. Ent. Rec. 46 p. 118 1934.

The postmedian fascia is drawn inwards towards the base and the whole of the forewing proximal to it is completely, or almost completely, suffused with grey and rust colour. The grey markings along the termen are reduced or absent, the postmedian fascia on the hindwing is also drawn in towards base and sometimes united along the outer margin to the grey basal mark, while the discal spot is displaced away from the base and confluent, or nearly so, with the postmedian fascia.

ab. argyrea Cockayne. Ent. Rec. 58 p. 94 1946. (pl. 2 f. 12)

The ground colour of the forewing is greyish-white and the rust colour is absent; the basal area is silvery grey with a line of dark brown bordering it externally; the large spot near the anal angle of both wings is silvery grey ringed by a narrow line of dark brown.





marginata L. aberrational forms etc.

The Type form has complete black outer borders to both wings and the costa with the black border, broken in the centre and just before apex. There are no median spots or blotches.

ab. stathylaeata Scopoli. Ent. Carn. 1763 p. 221 pl. 32 f. 548.

Forewing shows a black median band of spots or blotches, broken just below the middle, and an incomplete median chain of spots on hindwing.

ab. naevata Hubner. Beitr. Schmett. 2 p. 108 1790. (nom. nov. pro maculata Hubner)

= maculata Hubner. Beitr. Schmett. 1 p. 24 pl. 3 f. P 1786.

= marginaria Hubner. Eur. Schmett. (geom) fig. 80. 1796-99.

The figures of both maculata and marginaria show the median band complete on the hindwing but on the forewing it is broken just below the middle, thus leaving a costal blotch and a smaller inner-marginal black spot.

ab. nigrofasciata Schoyen. Tromso Mus. Aarsh. 5 p. 29 1882.

= marginaria Hubner. Eur. Schmett. (geom) fig. 544 (nec. 80) 1796-99.

A median band, at least on the forewing, complete, otherwise normal.

ab. conflua Strand. Arch. Math. Naturv. 22 (5) p. 29 1900.

The costal blotches confluent, also confluent with the marginal band.

ab. naevaria Hubner. Eur. Schmett. pl. 15 f. 79 1796-99.

The figure shows the forewings with two rather small black spots representing a median band, separated from each other and from the costal blotch though sometimes linking up with the latter. The hindwing with three or four very small separated black spots in the median area.

ab. discoecellularis Strand. Arch. Naturg. 85 A4 34 1919.

Markings normal but with a black isolated spot on the discoecellulars of the forewing.

ab. subdeleta Cockerell. Entomologist 22 p. 99 1889 (Newman's Brit. Moths p. 101)

= wendlandtiata Fuchs. Jahrb. Nassau. Ver. Nat. 1899 vol. 52 p. 142.

Forewing with the outer marginal band almost or altogether obsolete, narrow patches of black at base and middle of costa remaining. Hindwing unmarked.

ab. demarginata Fuchs. Jahrb. Nassau. Ver. Nat. 52 p. 141 1899.

all wings with the margins white with black spots at apex and anal angle just inside.

This presumably means that the normal black marginal band is divided by a thin white line separating the blotch at the apex and the one at the tornus of the forewing, from the extreme margin, and separate from each other.

ab. albomarginata Osthelder. Mitt. munchen. Ent. Ges. Suppl. Schmett. Sudbayern p. 49 1931  
Possesses between the brownish-black marginal field and the similarly coloured fringe a narrow white line.

Similar to the preceding but presumably demarginata had the inside spots small and separated while albomarginata had a normal margin merely divided by a white line.

ab. polutaria Hubner. Eur. Schmett. (Geom) fig. 77 1796-99.

The figure shows the forewings more or less normal but the hindwings without markings except for a small single spot at the apex, the fringes black.

Various authors describe this form as having the outer marginal band of the forewings divided by a white line as in albomarginata but in our copy of Hubner's Eur. Schmett. there is no trace of such a line.

ab. andrearia Lambillion. Rev. Soc. Ent. Nam. 19 p. 22 1919.

Forewings with two black blotches on costa, one basal the other median and slightly separated from the first. On the outer margin there is a fine line 1 mm. wide without the least dentation, the disc of the wing entirely without black points.



ab. *semialbata* Mellaerts. Lamb. 28 p. 117 1928.

More extreme than *subdeleta* Cockerell. At the apex of the forewings only traces of the outer-marginal band, the second costal spot is very small or entirely absent, only the basal blotch is normally developed. Hindwings entirely white.

ab. *duncei* Joannis. Bull. Soc. ent. Fr. 1912 p. 248 fig.

Fore and hindwings with a complete median band but all other markings absent, even the basal blotch fails completely.

ab. *mediofasciata* Hofner. Jahrb. Naturhist. Landes Mus. Karnten 24 p. 168 1897.

= *mediofasciata* Huene. Berl. Ent. Z. 46 p. 314 pl. 6 f. 1 1902.

Wings with a complete median black band but no marginal band, hindwing band sometimes incomplete.

ab. *albociliata* Horhammer. Mitt. munichen Ent. Ges. 13 p. 8 1923.

Relatively normal markings, in one specimen with snow-white fringes on all wings; in the second specimen the fringes are black and white chequered on forewing but pure white on hindwing.

ab. *nigrounicolorata* Haverkamp. Ann. Soc. Ent. Belg. 48 p. 187 pl. 1 f. No. 3700 1904.

The wings black throughout.

ab. *diluta* Cockayne. Entomologist 83 p. 53 1956.

= *brunnescens* Lemaire. Tijdschr. Ent. 94 p. 275 1951.

The markings not black or black-brown, but paler, more golden, or pale reddish-brown.

ab. *nigrosparcata* Cockayne. Ent. Rec. 58 p. 94 pl. 11 f. 8 1946.

Both wings are sprinkled with black scales, particularly along the nervures, giving a radiated appearance and partially obscuring the normal markings.

ab. *laeticolor* Lemaire. Tijdschr. Ent. 94 p. 275 1951.

Ground colour of the wings yellowish white.

ab. *postalbata* Lemaire. Tijdschr. Ent. 94 p. 274 1951.

Markings of the forewings normal, hindwings without markings.

ab. *suffusa* Prout. (nom. nov. pro *staphyleata* Huene.) Seitz 4 p. 312 1955.

= *staphyleata* Huene. (nom. preoc. Scop.) Berl. Ent. Z. 46 p. 314 pl. 6 f. 2 1901.

The ground colour suffused with smoky yellow-grey, the dark markings weak and blurred.

ab. *artoni* Burrau. Opusc. Ent. Lund. 15 p. 85

ab. *hjordisi* Lingonblad. Notul. Ent. 26 p. 57 fig. 1946.



adustata Schiff. aberrational forms etc.

ab. *extincta* Hannemann. Int. Ent. Z. II p. 62 1917.

The grey-blue band markings, also the marginal markings of the forewing and undulate lines of the hindwing are suffused.

ab. *suffusa* Prout. Seitz 4 p. 313 1915.

The pale area completely infuscated.

ab. *plumbosa* Cockayne. Entomologist 83 p. 53 pl. 10 f. 13 1950.

The whole of upper and underside of both wings leaden-grey, but the normal black markings are still visible.

ab. *obscura* Lempke. Tijdschr. Ent. 94 p. 276 1951.

The basal area of the forewings is connected by a black-grey suffusion along the costa with the dark postdiscal band, marginal area unicolorous black with whitish submarginal line and apex; hindwings black-grey up to the submarginal line in the centre a pale spot of the ground colour. The underside of both wings almost completely black-grey, in the centre somewhat paler.





distinctata H.-Sch.  
 = pictaria Curtis. aberrational forms etc.

ab. pallescens Lempke. Tijdschr. Ent. 94 p. 277 1951.

Ground colour of the forewings almost as pale as that of the hindwings.

ab. variegata Lempke. Tijdschr. Ent. 94 p. 277 1951.

The marginal area of the forewings very pale and grey, sharply contrasting.

ab. contrastaria Fuchs. Stett. Ent. Ztg. 62 p. 378 1901. (Prout in Scitz 4 p. 414)

The median area darkened.

This form is described under C. quadrifasciaria L. and would seem to be an error on Prout's part.



bimaculata F.

= taminata Schiff. aberrational forms etc.

ab. brunnemargo Prout. Seitz 4 p. 314 1915.

Distal margin of forewing to the postmedian line, or nearly, strongly suffused with brown, the lines generally better expressed.

ab. subnotata Warren. Nov. Biol. 2 p. 121 1895.

= binotata Fuchs. Soc. Ent. 18 p. 43 1903.

The costal spots strongly reduced.

ab. suffusa Cockayne. Entomologist 83 p. 54 1950. (Barrett pl. 274 f. 3B.)

Surface of the forewings is finely powdered with brown scales, especially along the nervures; the inner half of the hindwing is similarly powdered.

ab. unimaculata Cockayne. Entomologist 83 p. 53 pl. I f. 3 1950.

Only one costal mark present, at the end of the postmedian line.

ab. costijuncta Cockayne. Entomologist 85 p. 53 pl. I f. 2 1950.

The ante and postmedian lines are unusually close together and are united along the costa by a reddish-brown bar.



temerata Schiff. aberrational forms etc.

ab. *pauper* Hoffmann. Mitt. Naturw. Ver. Steierm. 54 p. 152 1918.

The blackish darkening on the outer margin of the forewing is completely absent so that only the transverse line and discoidal spot remain.

ab. *sericeata* Horhammer. Int. Ent. 2.27 p. 296 1933.

Completely markingless except for the discoidal spot. Of the blackish shading of the forewing only a few brownish scales are visible with a lens, also the normally sharply marked black spots are reduced to four weakly developed lunules.

ab. *tangens* Lomke. Tijdschr. Ent. 94 p. 279 1951. (descript. vol. 90 p. 147)

The two transverse lines which border the central area of the forewings touch each other below the middle and then separate again.

ab. *obscura* Lomke. Tijdschr. Ent. 94 p. 279 1951.

The white subterminal line of the forewing is completely covered by the dark suffusion.

ab. *basinotata* Cookayne. Entomologist 83 p. 53 pl. I f. I 1950.

The base of the forewing between the median nervure and the inner margin is occupied by a conspicuous black blotch, ill-defined distally; the submarginal band of the hindwing is more distinct than usual.





## pusaria L. aberrational forms etc.

ab. rotundaria Haworth. Lep. Brit. 1809 p. 289.

= confinaria Freyer. Neue Beitr. 1 p. 115 pl. 60 f. 2 1832.

Rounder winged, with the first two lines strongly approximated.

ab. juncta Lempke. Lamb. 39 p. 145 pl. 9 f. 6 1939.

The first two lines of the forewings for the greater part united.

ab. reducta Lempke. Lamb. 39 p. 146 pl. 9 f. 7 1939.

The first, or basal line of the forewings absent.

ab. bilineata Galvagni. Verh. zool.-bot. Ges. Wien 78 p. (16) 1928.

On the forewings the second transverse line, and on the hindwings the basal line, is absent.

ab. linearia Debauche. Lamb. 29 p. 66 1929.

On the forewing the first two lines are absent, on the hindwings the basal is absent leaving only the postmedian on both wings.

ab. ablataria Fuchs. Jahrb. Nass. Ver. Nat. 52 p. 144 1899.

Almost markingless, only the outer transverse line on all wings weakly indicated and a discoidal spot on hindwings.

ab. monotonica Strand. Nyt. Mag. Nat. 39 p. 56 1901.

All the transverse lines are absent, the discoidal spots extremely conspicuous.

ab. incornaria Meves. Ent. Tidskr. 35 p. 125 1914.

= striaria Hubner. Eur. Schmett. fig. 506 1818-19. (nom. neco.)

Wings completely without the transverse lines and discoidal spots.

ab. quadrilineata Lempke. Lamb. 39 p. 147 pl. 9 f. 13 1939.

An extra blackish transverse line on both wings on the outer side of the postmedian, making four lines on the forewing and three on the hindwing.

ab. quadripunctata Mitsche. Verh. zool.-bot. Ges. Wien. 74-75 p. (177) 1924-25 1926.

A prominent discoidal spot on all four wings.

ab. posteropunctata Lempke. Lamb. 39 p. 143 pl. 9 f. 2 1939.

A black discoidal spot showing on hindwings.

ab. irrorata Lempke. Lamb. 39 p. 147 pl. 9 f. 14 1939.

Wings covered with small striae slightly paler than the transverse lines.

ab. crassesignata Lempke. Tijdschr. Ent. 94 p. 280 1951.

Both wings with thick transverse lines.

ab. flavescens Lempke. Lamb. 39 p. 148 1939.

Ground colour of the wings yellowish.

ab. melania Oberthur. Etudes d'Ent. 20 p. 70 pl. 6 f. 99 1896.

The fringes and thorax remain white, the wings are dusky grey.

ab. heyeraria Herrich-Schaffer. Syst. Bearb. 3 p. 85 pl. 41 f. 251-252 1847.

The thorax, etc. whitish, wings blackish-grey, almost black. The figure shows four transverse lines on forewing and three on the hindwing. *fringes orange-brown*

This form would appear to be very much darker than Oberthur's melania.

ab. nivea Petersen. Beitr. Kunde Est.-Liv. u. Kurlands 1902 3op. p. 145.

hybrid. fletcheri Tutt. Brit. Lep. 5 p. 543 1906.

Cross between pusaria male and exanthemata female.



exanthemata Scop. aberrational forms etc.

ab. *pellagraria* Gueneo. *Spec. Gen. Lep.* 10 p. 55 1857.

The ground colour whiter, less irrorated, both wings with a black discal dot.

ab. *supracinctata* Währli. *Mitt. München Ent. Ges.* 14 pl. I f. 30 1924 & 15 p. 59 1925.  
Clear discoidal spots on upper and underside.

ab. *approximaria* Haworth. *Lep. Brit.* 1809 p. 289.

The first two transverse lines very close together, almost united to one.

ab. *bistriaria* Meves. *Ent. Tidskr.* 35 p. 125 1914.

~~The central transverse line absent.~~ For full description, see below.

ab. *pseudapproximaria* Lempke. *Tijdschr. Ent.* 88 p. 349 pl. p. 347 f. 6 1947.

The second transverse line of the forewing is close to the third or outer one.

ab. *reducta* Lempke. *Tijdschr. Ent.* 88 p. 349 pl. p. 347 f. 7 1947.

The basal or first line of the forewing is absent.

ab. *linearia* Lempke. *Tijdschr. Ent.* 88 p. 349 pl. p. 347 f. 8 1947.

The first and second transverse lines of the forewing are absent, the outer one remaining.

ab. *unicolorata* Teich. *Stettin Ent. Ztg.* 53 p. 356 1892.

almost unicolorous white.

ab. *inornata* Lempke. *Tijdschr. Ent.* 88 p. 350 pl. p. 347 f. 9 1947.

All transverse lines are absent.

ab. *crassesignata* Lempke. *Tijdschr. Ent.* 88 p. 350 pl. p. 347 f. 10 1947.

The transverse lines of both wings much darker than usual and sharply contrasting with the ground colour.

ab. *irrorata* Lempke. *Tijdschr. Ent.* 88 p. 350 pl. p. 347 f. 11 1947.

The wings covered with numerous short stripes of the colour of the transverse lines which thus become hardly or not at all visible. In typical specimens the wings are also covered by dark atoms but in *irrorata* they are much intensified, both in colour and number.

ab. *arenosaria* Haworth. *Lep. Brit.* 1809 p. 289.

The wings strongly covered with dark atoms or short streaks, the transverse lines still darker, so that they are clearly visible.

ab. *nogentina* Thierry-Mieg. *Ann. Soc. Ent. Belg.* 54 p. 388 1910.

The ground colour whitish with a tint of yellow but almost entirely covered with grey scales, the transverse lines absent.

More extreme than the two preceding forms which are not uniformly grey.

ab. *plumbata* Hackray. *Lamb.* 46 p. 35 1946 (fig. *Lamb.* 35 pl. 5.)

Uniformly leaden-grey, the transverse lines not visible, head and thorax white.

ab. *lativittata* Cockayne. *Ent. Rec.* 64 p. 239 pl. 10 f. 9 (not 7 as stated.) 1952.

The second transverse line, the median, is very much thickened and darkened forming a conspicuous band on both wings; the third line, the postmedian is also very thick and dark.

ab. *glabra* Lempke. *Tijdschr. Ent.* 94 p. 282 1951.

The dark streaks on the wings fail completely.

ab. *alba* Lempke. *Tijdschr. Ent.* 94 p. 282 1951.

The ground colour of the wings white instead of yellowish-white.

ab. *bistriaria* Meves. *Ent. Tidskr.* 1914. 35. p. 125.

The marking on both fore- and hindwings consists of only two yellow-brown transverse lines, of which the inner is the broader, and appears to have arisen through the fusion of the normal basal and central lines. The brown dusting on all wings is darker than usual, and the wings have a more rounded appearance. Similar to the *ab. rotundaria* Haw. in *C. pusaria*. (From the German translation, on p. 138.)





## pulveraria L. aberrational forms etc.

ab. unicolor Hirschke. Verh. zool.-bot. Ges. Wien 60 p. 113 1910.  
Uniform black-brown, without the lines or band.

ab. passetii Thierry-Mieg. Le Natural. 1884 p. 437.  
= saturaria Wagner. Ent. 1.23 p. 18 1909.  
Violetaceous grey instead of reddish-brown, the median band dark l/r or r.

ab. griseosens Lempke. Tijdschr. Ent. 94 p. 307 1951.  
Ground colour of the wings grey-brown.

ab. rufesens Lempke. Tijdschr. Ent. 94 p. 307 1951.  
The ground colour of the wings red-brown.

ab. linearia Lempke. Tijdschr. Ent. 94 p. 307 1951.  
Forewings with the two transverse lines, but the space between them is not bordered.

ab. approximata Lempke. Tijdschr. Ent. 94 p. 308 1951. (desert t. vol. 30 p. 147)  
The two transverse lines which border the central area of the forewings are close together.

ab. marginatipulveraria Bastelberger. Stett. Ent. 1.58 p. 216 1897.  
3 specimens of the summer generation. Dorsal red, the median area of forewing to basal half of hindwing more orange tinged, the rest more purple tinged, line thick, antemedian rather curved, postmedian less broad anteriorly than in form. Rather small and round winged.

ab. constricta Schneider. Polsk. Pismo Ent. 19 p. 254





*Fasciaria* L. aberrational forms etc.

Type form is grayish-red.

ab. *rosaria* Linnaeus. Syst. Nat. 1. 21 1758.

Ground colour red-brown.

ab. *grisearia* Fuchs. Stett. Ent. Mtg. 38 p. 143 1877.

Ground colour grey.

ab. *intermediaria* Gummengberg. Nova Acta Acad. Leop.-Carol 64 p. 471 1895.

(Williere Icones 1 pl. 36 f. 6.)

Transitional to the following *prasina*. Fore and hindwings green with reddish costal margin, fringes and edging to the transverse lines of forewing.

ab. *prasina* Schiff. Syst. Verz. 1775 p. 96.

= *viridifasciosa* Esper. Schmott. in Abb. Eur. 1. 58 pl. 90 f. 6-7 1794-97.

Ground colour green, the fringes and edging to the transverse lines white.

In the figure of Esper's *viridifasciosa* the costa has a yellow edge but the fringes are not reddish, neither are the transverse lines so it is probably the same as *prasina* Schiff. If thought necessary it can stand as a different form with yellow-red costa but whitish lines and fringes.

ab. *ochrearia* Joannis. Bull. Soc. Ent. Fr. 1903 p. 231.

= *ochracearia* Rebel.

Ground colour clear ochreous.

ab. *extincta* Wehrli. Mitt. Thurg. Naturf. Ges. 20 1913 p. 272.

Both wings with the white lines almost or entirely obsolete.

ab. *cinereostrigaria* Klemensiewicz. Verh. zool.-bot. Ges. Wien. Sitzungsber.: 42 1891 p. 67

The transverse lines dark grey instead of white

ab. *manitiaria* Herrich-Schaffer. Schmott Eur. 3 pl. 58 f. 355 1847.

Uniform dark reddish liver colour with the transverse lines hidden, the central band showing somewhat darker.

ab. *rufostrigaria* Lempke. Tijdschr. Ent. 94 p. 286 1951.

The transverse lines dark red. Occurs with the red as well as with the green forms though rarely with the latter.

ab. *approximata* Lempke. Tijdschr. Ent. 94 p. 286 1951. (descript. vol. 90 p. 147)

The two transverse lines which border the ventral area of the forewing are close together.

ab. *conjuncta* Pokorný. Acta. Soc. Ent. Cech. 15 p. 8 fig. 1918.

The two transverse lines of the forewings are joined together in almost their entire length.

ab. *anastomosaria* Hofer. Verh. zool.-bot. Ges. Wien. 70 p. (81) fig. 9 1920.

The two transverse lines of the forewing touch each other below the middle and then separate again.

ab. *reducta* Zweigelt. Z. Ost. Ent. Ver. 3 p. 54 1918.

Transitional to ab. *extincta* Wehrli (above). The transverse lines very narrow, and obsolete in their upper half.

ab. *unicolor* Heinrich. Dtsch. Ent. Z. 1916 p. 329 pl. 4 f. 18. 1917.

The whitish transverse lines covered by the ground colour and have a distinct greenish shade so that it has a uniform appearance.

ab. *interrupta* Cockayne. Ent. Rec. 64 p. 239 1952.

On the forewing the postmedian line is displaced towards the base and broken into two parts; there is a costal part extending to the median nervure where it turns to join the broken antemedian line and an inner marginal part extending to a point just above nervure I where it also turns basal to join the antemedian line; the two areas between the remains of the ante and postmedian lines are darker than the ground and are the only remnants of the median area. On the hindwing the transverse line is displaced towards the base.



Geom. 213 continued.

fasciaria L. continued.

ab. rubronervata Albers. Bombus Hamburg No. 31 n. 137 1946.



margaritata L. aberrational forms etc.

ab. rubrociliata Schawerda. Z. Ost. Ent. Ver. 17 p. 30 1932.  
Both wings with the fringes carmine red.

ab. approximata Lomke. Tijdschr. Ent. 94 p. 287 1951. (descript. vol. 90 p. 147)  
The two transverse lines which border the central area of the forewings are close together.

ab. triangularis Cockayne. Ent. Mon. Mag. 84 p. 265 pl. E f. I 1948.  
The ante and postmedian lines of the forewing are much closer together on the costa than usual and approach one another to coalesce midway between nervures 2 and 1, forming a single narrow white stripe, which is continued to the inner margin. The line on the hindwing is much nearer to the base than usual.

ab. zawiszae Wize. Motyle Okolic Jezowa, Posen 1917 p. 14.  
= dulcinaria Dannehl. Ent. Z. 41 p. 316 1927.  
Specimens of the summer generation, smaller.

ab. olivata Burrau. Cause. Ent. Lund. 15 p. 85





autumnaria Verneburg. aberrational forms etc.

ab. pallida Lempke. Tijdschr. Ent. 94 p. 288 1951.  
Ground colour pale yellow.

ab. aurantiaca Lempke. Tijdschr. Ent. 94 p. 289 1951.  
Ground colour deep orange-yellow.

ab. brunneata Cockayne. Ent. Rec. 64 p. 239 1952.  
The head, thorax, abdomen and wings are brown with no trace of the normal orange, the brown becoming darker towards the apex of the forewing and the margin of the hindwing; the ante and postmedian lines are plainly visible on the forewing and the discoidal spot is present. Underside entirely brown.  
Differs from ab. schultzi which has an orange head and thorax and orange at the base of the forewing.

ab. schultzi Siebert. Soc. Ent. 22 p. 33 1907.  
Both wings entirely infuscated, only the veins and extreme base of the forewings remaining orange and the costal margin of the hindwing more or less orange.

ab. elara Cockayne. Ent. Rec. 64 p. 239 1952.  
The usual speckles on both wings are almost entirely absent, but the transverse lines are present.

ab. avicata Lempke. Tijdschr. Ent. 94 p. 289 1951.  
At the apex of the forewings is a dark purplish blotch.

ab. maculosa Lempke. Tijdschr. Ent. 94 p. 289 1951.  
The wings heavily marked with dark atoms.

ab. tangens Lempke. Tijdschr. Ent. 94 p. 289 1951. (descript. vol. 90 p. 147)  
The two transverse lines which border the central area of the forewings touch each other below the middle and then separate again.

ab. triangularis Cockayne. Ent. Mon. Mag. 84 p. 265 pl. 1. f. 4 1948.  
On the forewing the ante and postmedian lines are thick and are united just before reaching the inner margin.

ab. augustaria Kroulikovsky. Bull. Soc. Nat. Moscou (1896) n. s. 10 p. 32 1897.  
The transverse lines and dark speckling entirely lacking.

ab. distincta Heinrich. Dtsch. Ent. Z. 1916 p. 259 pl. 4 f. 25 1917  
The transverse bands, which in the type are mostly not continuous or prominent, are complete and very distinct from the costa to inner margin, the discoidal spot also very distinct.

hybrid bartfordi Tutt. Ent. Mon. Mag. 31 p. 280 1895.  
Cross between autumnaria male and quercinaria female.



## quercinaria Hufn. aberrational forms etc.

ab. *carcinaria* Hubner. Eur. Schmett. (Geom.) fig. 47 1796-99.  
The ground colour deep orange-yellow.

ab. *angularia* Hubner. Beitr. 1790 vol. 2 p. 98 pl. 4 f. 1 & 2.  
Dark shading distally to the postmedian line.

ab. *equestraria* F. Gen. Ins. 1777: 284.  
= *infusata* Staudinger. Cat. Ed. 2. 1871: 156.  
The median area normal, the proximal and distal areas infuscated.

ab. *maculosa* Lempke. Tijdschr. Ent. 94 p. 290 1951.  
The forewings speckled with dark.

ab. *clausa* Lempke. Tijdschr. Ent. 94 p. 290 1951. (descript. vol. 82 p. 197.)  
The first and second transverse lines of the forewing are united at the inner margin.

ab. *obsoleta* Lempke. Tijdschr. Ent. 94 p. 290 1951.  
The transverse lines are obsolete.

ab. *clara* Cockayne. Ent. Rec. 54 p. 35 pl. 2 f. 2 1942.  
The basal, antemedian and postmedian lines are absent. There is an ill-defined brown area at the base and a complete broad brown marginal band; the discoidal spot is weak and indistinct.

ab. *approxinata* Cockayne. Ent. Rec. 64 p. 240 pl. 10 f. 4 1952.  
On the forewing the antemedian and postmedian lines are abnormally close together.

ab. *brumeata* Cockayne. Ent. Rec. 64 p. 240 1952.  
Ground colour dark brown, the transverse lines showing clearly in a darker tint.

ab. *subfuscata* Cockayne. Ent. Rec. 64 p. 240 1952.  
The ground colour infuscated as in *verfuscata* Prout but with two clear yellow transverse lines on the forewing instead of very indistinct ones or none at all.

ab. *barrettaria* Oberthur. Lep. Comp. 6 p. 304 1912 (Barrett pl. 292 f. 1F)  
= *infusata* Prout. Seitz 4 p. 323 1915.  
Entirely brown chocolate.  
Prouts *infusata* was described as wings entirely infuscated.



elnaria Linn.

postfasciata Van Wisselingh. Ent. Ber. Amst. 1961, 21, p. 40.

on the upperside of the hindwings a discal (~~costal~~) band about 3 mm wide





## alniaria L. aberrational forms etc.

ab. canaria Hubner. Beitr. 2 p. 99 pl. 4 f. Y I & 2 1790.  
 = pallida Lempke. Tijdschr. Ent. 94 p. 291 1951.  
 Ground colour pale yellow.

ab. aurantiaca Lempke. Tijdschr. Ent. 94 p. 291 1951.  
 Ground colour orange.

ab. concolor Lempke. Tijdschr. Ent. 94 p. 291 1951.  
 The collar of the same colour as the ground colour of the wings.

ab. glabra Lempke. Tijdschr. Ent. 94 p. 291 1951.  
 The dark streaks on the wings completely, or almost completely, fail.

ab. approximata Lempke. Tijdschr. Ent. 94 p. 291 1951. (descript. vol. 90 p. 147)  
 The transverse lines of the forewing are close together.

ab. clausa Lempke. Tijdschr. Ent. 94 p. 291 1951. (descript. vol. 82 p. 197.)  
 The two transverse lines of the forewing are united at the inner margin.

ab. triangularis Lempke. Tijdschr. Ent. 94 p. 291 1951.  
 On the forewings the two transverse lines touch each other before the inner margin and then continue as one line.

ab. maculosa Nordstrom. Svenska Fjar. 1941 p. 295 pl. 41 f. 5B.  
 Wings strongly sprinkled with darker flecks.

ab. hannemanni Heinrich. Dtsch. Ent. Z. 1916 p. 529 pl. 4 f. 24 1917. (Feb.)  
 = infuscata Hannemann. Int. Ent. Z. 11 p. 62 1917 (June)  
 The basal and marginal field darker. The figure shows the hindwing margin, from the transverse line outwards, very much darker than the basal half.  
 The ab. infuscata of Hannemann has the basal area of the forewings and the marginal area of both wings darkened with violet-grey.

ab. grisescens Cockayne. Ent. Rec. 64 p. 240 1952.  
 The whole surface of both wings suffused with greyish-brown.

ab. destrigaria Cockayne. Ent. Mon. Mag. 84 p. 265 pl. E f. 2 1948.  
 Ground colour paler than usual and without freckling; the lines and discoidal spot are only slightly darker than the ground colour and almost invisible.

ab. coarctata Cockayne. Ent. Mon. Mag. 84 p. 266 pl. E f. 3 1948.  
 The antemedian and postmedian lines are fused near the costa to form a single thick purplish stripe, which runs obliquely across the forewing, but does not quite reach the inner margin.



## fuscantaria Stephs. aberrational forms etc.

ab. effuscaria Rebel. Stgr.-Rbl. Cat. Ed. 3 - .327 1901.

The usual darkening in the marginal area is absent, or almost so.

ab. perfuscata Rebel. Berge's Schmett. 1910 p. 388.

Unicolorous strong brown dusting over the whole of the wings instead of only in the marginal area of the forewings; the lines strong.

ab. glabra Wize. Polsk. Pismo Ent. 13 p. III 1934.

The dark streaks on the upperside of the forewing fail.

ab. lestrigaria Galvagni. Verh. zoll.-bot. Ges. Wien. 52 p. 711 1892.

Both of the transverse lines of the forewing are absent.

ab. pallida Lempke. Tijdschr. Ent. 94 p. 292 1951.

Ground colour pale yellow.

ab. aurantiaca Lempke. Tijdschr. Ent. 94 p. 292 1951.

Ground colour orange.

ab. juncta Wize. in Romaniszyn, Nauka Bot. Polski 1 - . 483 1929.

The transverse lines of the forewing touch each other at the inner margin.

ab. pallidior Burran. Trans. Ent. Soc. Lond. 15 p. 85.

ab. approximata Lucas. Ent. Ber. (Amst.) 1959. 19. p. 206.

The two transverse lines which border the central area are close together.



*Arctia Schiz.*, aberrational forms.

ab. *tiliaria* Hübner. Eur. Schmiedt. (Geom. II 1796-99 fig. 25).

Ground colour pale yellow.

The figure of "tiliaria" in Beitr. Schmiedt. 2 pl. 4 f. 1 is quite incorrect. It looks more like *quercinaria*.

ab. *aurantiaca* Lempke. Tijdschr. Ent. 94 p. 293 1951.

Ground colour orange.

ab. *unicoloria* Esper. Eur. Schmiedt. 1795 p. 5 pl. 19 f. 4. n. 101.

= *obsolata* Lempke. Tijdschr. Ent. 94 p. 294 1951.

The transverse lines are obsolete.

ab. *citrina* Cockayne. Ent. Rec. 64 p. 240 1952.

Ground colour citron or lemon yellow.

ab. *angulifera* Demaison. Bull. Soc. Ent. Fr. 1918 p. 234.

= *clausa* Lempke. Tijdschr. Ent. 94 p. 293 1951. (descript. vol. 82 p. 197.)

The two transverse lines of the forewing, separated at the costal margin, meet or join before reaching the inner margin to form a sharp angle. In the type these lines touch the inner margin but on the whole they do not quite reach it. Demaison cites the figure in Oberthur Lep. Comp. 4 pl. 51 f. 436 as similar. In this the transverse lines meet on the inner margin forming a large triangle.

ab. *tangens* Lempke. Tijdschr. Ent. 94 p. 293 1951. (descript. vol. 90 p. 147)

The two transverse lines of the forewing meet below the middle and then separate again.

In the preceding form the lines do not separate again after uniting.

ab. *approxinata* Lempke. Tijdschr. Ent. 94 p. 293 1951. (descript. vol. 90 p. 147)

The transverse lines of the forewings are close together.

ab. *satura* Schwingenschuss.





## bilunaria Esr. aberrational forms.

n.aest. illunaria Esr. Eur. Schmott. 5 p. 76 pl. I f. I-2 1795.

= juliaria Haworth. Loe. Brit. 1809 p. 293.

= aestivalis Guenee. Ann. Soc. Ent. Fr. 1842 n. 245.

Specimens of the summer generation. Much smaller and much less irrorated.

ab. braconieri Nordstrom. Ent. Tidskr. 56 p. 156 1935.

On forewing the middle shadow and the basal line are placed next to each other almost or partly merging.

ab. deumbraria Klemensiewicz. in Romaniszyn, Fauna Mot. Polski. I n. 484 1929.

= estynensis Smith. Rep. & Proc. Chester Soc. Nat. Sci. L. & A. n. 72 pl. f. 5 1947.

On the forewings the middle shadow line is absent.

ab. bilineata Grosse. Casanis Ca. Bol. Ent. 35 n. 88 fig. 2B 1938.

On the forewing the postmedian line is absent.

ab. unilinearis Smith. Proc. Chester Soc. Nat. Sci. L. & A. (1950) n. 76 pl. 4 f. 2 1951.

= centrilineata Lempke. Tijdschr. Ent. 94 n. 295 1951.

On the forewings only the second cross line, the central shade, is present.

ab. infusata Strand. Nyt. Mag. Naturv. 39 n. 56 1901.

The space between the middle shadow line and the postmedian line is darkened into a distinct band.

ab. brunneofasciata Smith. Proc. Chester Soc. Nat. Sci. L. & A. n. 74 pl. 3 f. 3 1951.

Forewings pale orange-brown heavily dusted with dark brown. The second and third transverse lines have the space between them heavily clouded with dark brown forming a band. Hindwings with a line of dark dusted scales about the middle.

An unnecessary name as it is so similar to the preceding in its main character.

ab. pyralis Smith. Proc. Chester Soc. Nat. Sci. L. & A. n. 74 pl. 3 f. 1 1951.

Forewings pale beige ground dusted with pale greyish-brown. The first transverse line black and very distinct, the second and third also black and the space between them is nearly as black, thus forming a broad band. Hindwings with a slight band across the middle.

An unnecessary name as it is covered by ab. infusata Strand.

ab. nigrofasciata Smith. Rep. & Proc. Chester Soc. Nat. Sci. L. & A. n. 72 fig. 6 1947.

Forewings ground colour smoky-cream, white along costa, dusted with greyish-black, markings greyish black. The first transverse line is very distinct, the usual second line takes the form of a broad band about 4 mm. at the costa and 3 mm. at the inner margin. Heavily clouded towards the outer margin. Hindwings similar, more heavily dusted about the middle giving the impression of a broad band.

Very similar to the preceding forms.

ab. exquisita Smith. Proc. Chester Soc. Nat. Sci. L. & A. n. 72 pl. 3 f. 7 1950.

Forewings ground colour smoky-white, except along the hindmarginal area including the lunate blotch where it is a dull orange-brown, the lunate blotch having traces of orange red, as also has the ovate patch at the base of the costa; the whole surface of the wings is slightly speckled with greyish-black, except the first transverse line and the space between the second and third lines which are both blackish, thus forming a broad band. Hindwings ground colour smoky-white speckled with greyish-black, more so about the middle, thus forming a band; the hindmarginal space also rather heavily freckled. Head greyish-white; thorax greyish-brown; abdomen greyish-brown with smoky-white rings.



ab. *tetrafasciaria* Smith. Proc. Chester Soc. Nat. S.L. & A. 3 p.75 pl.5 f.3 1951. Forewings smoky-white, but so heavily dusted and speckled with brown as to appear of this colour, except for a small portion of the costa on each side of the first line and between the central band and the lunate blotch at the tip of the wing. The ovate patch at the base and the lunate blotch are both chestnut. There are no second and third lines but a broad black band occupies the space between where these should be. Hindwings similar also having a broad blackish band across approximately the middle of the wing. Head smoky-white, thorax and body brownish.

ab. *erythrofasciata* Smith. Proc. Chester Soc. Nat. S.L. & A. 3 p.72 pl.9 f.3 1950. Forewings ground colour brownish-white, dusted or speckled with reddish-brown; the usual golden-chestnut ovate patch at the base of the costa and the lunate blotch at apex are present. The first line is very distinct, the space between the second and third lines is heavily clouded with reddish-brown forming a broad band. Hindwings similar in colour heavily dusted with reddish-brown forming a band just anterior to the middle; the hindmarginal space similarly dusted. Head brownish-white, thorax reddish-brown and abdomen brownish with darker rings.

ab. *rosea* Smith. Proc. Chester Soc. Nat. S.L. & A. 3 p.72 pl.9 f.4 1950. Forewings ground colour pink speckled with brown, except along the dorsal margin where the ground colour is cream, and the hind-marginal area including the lunate blotch both of which are pale orange-brown; the ovate patch at the base is reddish; the usual transverse lines are dark brown. Hindwings cream, slightly speckled with brown except about the middle where the irroration is heavier forming a slight band across part of the wing. Head pinkish, thorax brownish and abdomen brownish with pinkish rings. The whole insect has a pink appearance.

ab. *nigrobrunneata* Smith. Proc. Chester Soc. Nat. S.L. & A. 3 p.73 pl.9 f.8 1950. The forewings have a smoky-brown appearance; the ovate patch at the base is reddish-brown; the lunate blotch at the apex and the hindmarginal area have traces of orange brown; the usual cross lines are black. Hindwings smoky-brown. The underside of both wings blackish chocolate with a few whitish specks along the costa and traces of brown in the lunate blotches; there is also a faint trace of brownish colour at the base of the hindwings. Head, thorax and abdomen upperside smoky-grey, underside blackish-chocolate, the abdomen also having greyish-white rings.

ab. *extrema* Smith. Proc. Chester Soc. Nat. S.L. & A. 3 p.73 pl.10 f.4 1950. The underside of all wings have a white ground, and except for two small specks of orange-red on the ovate patches at the base of forewings the whole of the markings are blackish-chocolate. Head whitish, thorax and abdomen smoky-white with paler rings on the latter. The name refers particularly to the underside, the upperside has a white ground with two small specks of orange-red on the ovate patch; the transverse lines are black and the rest of the markings blackish-chocolate.

ab. *pallida* Smith. Proc. Chester Soc. Nat. S.L. & A. 3 p.73 pl.10 f.5 1950. Forewings pale beige ground dusted with beige; hindmarginal space except for a white edging to the lunate blotch is entirely of a pale brown colour; the ovate patch at the base is orange; between this and the second line there is a small line about 1-2 mm. in length descending from the costa, these lines are brown; there is no third line. Hindwings whitish, the hindmarginal space heavily speckled with beige, as is also the area near the base, there is a faint cross-line in this space. Head, thorax and abdomen pale brown.

ab. *v-signata* Smith. Proc. Chester Soc. Nat. S.L. & A. 3 p.74 pl.10 f.6 1950. Forewings with whitish ground colour; all markings brownish except the ovate patch at the base which is reddish; there is no first transverse line; the second is so shaped as to resemble a V placed almost horizontally, the point of the V towards the third line which is normal. Hindwings whitish ground speckled with brownish. Head, thorax and abdomen pale brown, the latter with lighter rings.





ab. fumata Smith. Proc. Chester Soc. Nat. S. L. & A. 3 p. 74 pl. 10 f. 7 1950.  
Forewings ground colour beige, heavily speckled with blackish-chocolate; the costa is lightly speckled with white and the lunate blotch which is dull brown is edged on the inside with white, one ovate patch at the base is redish brown; the three transverse lines are blackish. Hindwings ground beige, heavily speckled with blackish chocolate, especially on the hindmarginal space; about the middle of the wing there is a blackish transverse line. Underside of both wings dark chocolate, except for the ovate patch which is brown, some whitish markings along the costa and edging the lunate patch on the inside, and a few other markings including a transverse line about the middle of the hindwing. Head, thorax and abdomen greyish-brown.

ab. fulvopustulata Smith. Proc. Chester Soc. Nat. S. L. & A. 3 p. 74 pl. 11 f. 9 1950.  
Forewings ground pale yellow, darker in the hindmarginal area, including the lunate blotch; the ovate patches at the base are orange; the whole surface of the wings is lightly speckled with blackish-grey; the usual three transverse lines are present and are blackish; there are whitish streaks along the costa. Hindwings ground pale yellow, darker in the hindmarginal space; the whole of the wings lightly speckled with blackish-grey. Underside ground smoky-white, except along the costa and the edging of the lunate blotches which are white; the markings and irrorations are smoky-chocolate; in addition the ovate patch, the lunate blotch, and the hindmarginal area are yellowish. Hindwings are remarkable about two thirds of the area being greyish-chocolate and the remainder bright yellow; a large yellow patch at the base and another in the hindmarginal space; a smoky-white line crosses the middle of the wing transversely. Head, thorax and abdomen light brownish beige.

ab. connexa Smith. Proc. Chester Soc. Nat. S. L. & A. 4 p. 74 pl. 5 f. 4 1951.  
The main feature of the aberration is the joining of all three cross lines along the costa of the forewings, the space between the second and third lines being heavily clouded with the same colour as the lines forming a band.

ab. brunneopustulata Smith. Proc. Chester Soc. Nat. S. L. & A. 4 p. 75 pl. 3 f. 7 1951.  
Forewings whitish ground, except the marginal area, including the lunate blotch, which is golden brown; the whole surface of the wings is lightly speckled with greyish-brown. The usual three transverse lines are present and dark brown. Hindwings similar to forewings as regards colour and irroration, including the golden-brown marginal area. Hindwings underside similar in colour to the forewings but more heavily speckled, the usual cross-lines being present. There is a large brown patch at the base and another in the marginal area; a smoky-white line crosses the middle of the wing transversely. Head, thorax and body brownish.

ab. rubra Smith. Proc. Chester Soc. Nat. S. L. & A. 4 p. 75 pl. 3 f. 8 1951.  
Forewings underside bright orange-brown with the usual three cross-lines which are black, the area between the first and second lines being lighter in colour than the rest of the wings. The spaces between the base and the first line and between the second and third are speckled with black, giving the appearance of bands. Hindwings underside, similar to forewings but brighter between the first black transverse line and the base; there is also, nearer the marginal area, a second black line which is not so pronounced. Head, thorax and body similar in colour to the wings.

ab. reversa Smith. Proc. Chester Soc. Nat. S. L. & A. 4 p. 76 pl. 4 f. 3 1951.  
Forewings pale beige ground speckled with brown; the cross lines are brown, not very distinct, and broken in places. There is hardly a trace of the ovate patch at the base, and the lunate blotch is only slightly brighter than the rest of the wing. Hindwing similar ground to the forewings but very heavily speckled with brown from about the centre of the wing to the margin. Underside of both wings similar in ground colour to the upper-wings, but the hindwings, except for a line running across the centre, are so heavily dusted and speckled that they appear brown.





ab. nigrovanellata Smith. Proc. Chester Soc. Nat. S. L. & A. 4 p. 77 pl. 4 f. 5 1951.  
Forewings ground colour varying from white to beige; heavily speckled with brown, especially in the hindmarginal area. The main feature is the blackish area from about the normal position of the second cross-line to the base of the wing. Hindwings similar in ground colour to the forewings, also heavily speckled in the marginal area.

ab. flavomarginaria Smith. Proc. Chester Soc. Nat. S. L. & A. 4 p. 77 pl. 4 f. 7 1951.  
Underside of both wings is typical as regards colour, with the exception of the marginal area of the hindwings which is yellow.

ab. mixta Smith. Proc. Chester Soc. Nat. S. L. & A. 4 p. 77 pl. 4 f. 8 1951.  
The ground colour of both wings creamy-white, very heavily speckled in places with blackish-brown; the markings are not of a distinctive character and appear to be mixed; the orange markings of the ovate patch and the lunate blotch on the forewings are hardly visible.

ab. nigra Smith. Proc. Chester Soc. Nat. S. L. & A. 4 p. 77 pl. 5 f. 2 1951.  
Wings sooty black except for traces of dark chocolate-brown towards the outer margin. There are no white markings. The fringes are chocolate-brown. Head, thorax and body black.

ab. nigrata Smith. Proc. Chester Soc. Nat. S. L. & A. 4 p. 78 pl. 5 f. 3 1951.  
The wings are dark chocolate, slightly paler towards the outer margin. There are traces of the usual transverse lines on the forewings, but there are no white markings. Head, thorax chocolate, the body blackish.

ab. chalcoceras Smith. Proc. Chester Soc. Nat. S. L. & A. 5 p. 91 pl. 5 f. 1 1954.  
Head, thorax and abdomen whitish-buff mixed with fuscous; palpi warm buff, frons with some whitish hair-seals; abdominal segments clearly edged with whitish-buff. Wings whitish buff, strongly suffused with warm buff over the cell, the inner margin and the distal third of the wing; oval patch at base of forewing and lunar apical patch orange-brown; antemedial and postmedial fasciae fuscous-black, sparse fuscous-black irroration overall. Underside of forewing whitish-buff heavily shaded with two long diverging bands of fuscous from base towards termen, distal third and apex with orange-brown. Sparse fuscous-black irroration over all. The only traces of whitish are the above-mentioned hair-seals on the frons, and a trace on the underside of the forewing costa.

ab. glaucosceus Smith. Proc. Chester Soc. Nat. S. L. & A. 5 p. 91 pl. 5 f. 2 1954.  
The general colouration of this variation is a fairly uniform greenish to bluish grey (glaucous) with the antemedial and postmedial fasciae fuscous black, the oval patch at base of costa, the medial shade and the lunar apical patch olive brown. Underside similar but with the forewings dark olive green over the distal third, the hindwings dark olive green with a narrow almost broken medial glaucous band.

ab. chionoehloria Smith. Proc. Chester Soc. Nat. S. L. & A. 5 p. 91 pl. 5 f. 3 1954.  
Head white, palpi light buff. Thorax whitish mixed with olive green to greyish olive, each segment distally edged with white. Abdomen light buff. Wings with a white ground colour, suffused in the base of the forewing with light buff over the area between the cell and the inner margin, and in the hindwing over the basal half, most noticeably along the inner margin. Underside delicately shaded with olive green. The whole insect sparsely irrorate with smoke grey to fuscous black or greenish black.



ab. *dolichobalia* Smith. Proc. Chester Soc. Nat. S.L. & A. 5 p.92 pl.5 f.4 1954.  
Head, thorax and abdomen light buff, vertex whitish, palpi warm buff, thorax strongly shaded with fuscous, abdominal segments strongly barred with fuscous black; forewings pale buff shaded with warm buff; from base to antemedial along costa and base of cella patch of ochraceous orange streaked with chestnut; antemedial fascia fuscous, medial shade fuscous, broader and less concentrated, with a strong elongate fuscous spot along costa from antemedial, projecting beyond the medial shade to the light discocellular mark; postmedial fascia fuscous, edged distally with white, broadest at costa; lunar apical mark ochraceous orange streaked with chestnut and preceded by white subterminally from costa to vein M2. Hindwing with proximal two thirds light buff, distal third warmer in tone, the whole wing lightly irrorate with fuscous, less so in the proximal quarter, the wing appearing divided into three zones. Underside more heavily infuscate, the discocellular lunules and the postmedial fasciae sharply paler, and the subterminal whitish fascia evident at the tornus as well as before the apex.

ab. *rubropustulata* Smith. Proc. Chester Soc. Nat. S.L. & A. 5 p.92 pl.5 f.8 1954.  
Forewing reddish orange in colour, the marginal area, including the lunar apical patch, the ovate patch at the base of the costa, most of the costa and medial fascia, being brighter in colour than the rest of the wing; antemedial and postmedial fasciae are brownish. Hindwing upperside similar in colour to the forewing with the marginal area brightest. Fore and hindwing underside ground colour blackish-brown with the marginal areas and the base of the wings reddish orange; largest patch of this colour being in the hindwing joining the anal angle.

ab. *postmediojuncta* Boyes. Proc. Chester Soc. Nat. S.L. & A. 5 p.95 pl.5 f.5 1954.  
Forewing with medial fascia joined along the costa to the postmedial fascia. The width of this connection extends from the costa to the nearest vein.

ab. *infravenosa* Boyes. Proc. Chester Soc. Nat. S.L. & A. 5 p.95 pl.5 f.6 1954.  
The veins of the hindwing are particularly prominent from the subterminal whitish fascia to the cilia.

ab. *albicosta* Boyes. Proc. Chester Soc. Nat. S.L. & A. 5 p.95 pl.5 f.7 1954.  
General coloration light to warm buff, with fasciae fuscous; oval spot at base bright ochraceous orange marked with chestnut; no trace of orange or chestnut in the lunar apical patch; between the oval basal spot and the lunar apical mark the costa is broadly white, broken by the fasciae and a few fuscous stripes little trace of fuscous irroration. Underside fuscous; forewing pattern almost identical with the upperside, hindwing with a prominent whitish discocellular mark and a prominent postmedial fascia, with some chestnut and orange shading in proximal and distal thirds.

ab. *radiata* Boyes. Proc. Chester Soc. Nat. S.L. & A. 3 p.79 pl.10 f.3 1950.  
Forewings and hindwings almost typical except for a remarkable series of seven elongated, almost wedge-shaped creamy white markings on each forewing all of which reach to the hindmarginal fringes. The longest marking on the right right forewing emerges from the base but the corresponding left wing marking starts at the first cross-line. The bottom marking starts between the second and third lines and the others on about the third line. Between each marking is a brown vein. the underside also shows these markings very distinctly.

ab. *ialensis* Vaughan-Roberts. Proc. Chester Soc. Nat. S.L. & A. 3 p.79 pl.10 f.2 1950.  
Both wings ground colour whitish, very heavily speckled with reddish-brown except that about the centre of each wing there is a space which gives the impression of a broad pale line running transversely across each wing just anterior to the hindmarginal areas; all the usual dark transverse lines are absent; the lunate blotch at the tip of forewing is yellow; the ovate patch at base represented only by two minute orange coloured dots. Head, thorax and abdomen reddish-brown.





ab. schizomedia Vaughan-Roberts. Proc. Chester Soc. Nat. 3. L. 4 p. 78 pl. 5 1951.  
The feature of this aberration is the occurrence of two lines in place of the usual single median line on the forewings, giving with the first and third the appearance of four transverse lines, except on the costa and dorsum where these two lines converge.

ab. grisescens Lempke. Tijdschr. Ent. 94 p. 295 1951.  
Ground colour of the wings greyish, without yellow tint., sometimes among the first generation.

ab. obscura Lempke. Tijdschr. Ent. 94 p. 295 1951.  
Ground colour of the wings black-grey. The form is not identical with ab. harrisoni Wagner which is dark brown or black-brown.

ab. glabra Lempke. Tijdschr. Ent. 94 p. 295 1951.  
First generation without the dark specks on the forewings and hindwings.

ab. rufescens Lempke. Tijdschr. Ent. 94 p. 295 1951.  
Ground colour of the wings reddish.

ab. eblanaria Baynes. Ent. Rec. 64 p. 5 1952.  
Male, upperside of wings varies from pinkish-brown to deep maroon-red. Usual markings obscured, to the extent, in some specimens, of making the insect appear almost unicolorous. In most examples there is a band of lighter scales along the costa. Underside much darker and more obscurely marked than in typical form. Female, upperside brownish-buff through varying shades of obscure olive-buff. Extreme examples have a dark almost leaden appearance. Some are almost unicolorous. Undersides considerably duller than in typical bilunaria.

ab. costijuncta Cockayne. Ent. Mon. Mag. 84 p. 266 pl. E f. 5 1948.  
Forewing with the ante and postmedian lines united by a thick dark brown mark; on the inner margin these lines are the usual distance apart. The description is wrong, the figure of the type shows the antemedian and median shadow-line united along the costa, not the postmedian as stated in the description.

ab. brunnearia Mansbridge. Ent. Rec. 23 p. 228 1911.  
Wings of a uniform dark ferruginous-brown colour.

ab. harrisoni Wagner. Z. Ost. Ent. Ver. 13 p. 62 1928.  
Ground colour sepia-brown, lighter or darker, with a reddish tinge. Some examples almost black-brown. All the usual markings appear to be pushed aside, except for the transverse lines in the basal and marginal fields, which are whitish, as is also the fine white central spot on all wings, showing up clearly on account of the dark ground colour. On the hindwings the central shadow of the typical forms shows up as a rather distinct whitish line in this aberration.

ab. garretti Wagner. Z. Ost. Ent. Ver. 13 p. 62 1928.  
The summer generation form of the preceding harrisoni. Differs in having a distinct, brighter, more copper-brown ground colour, the central spots far less distinct and often entirely absent, the same applying to the whitish transverse lines. It agrees with the summer form, juliaria Haworth, of the typical form.

hybrid tetrabilunaria Klemensiewicz. Int. Ent. 2. 22 p. 309 1948.  
Cross between tetralunaria male and bilunaria female.

hybrid parvilunaria Bartel. Ent. Nachr. 26 p. 342 1900.  
Cross between bilunaria male and tetralunaria female.





## Lunaria Schiff. aberrational forms etc.

gen. aest. delunaria Hubner. Eur. Schmett. (Geom) fig. 34 1796-99.

The summer generation usually smaller, somewhat lighter, the moon on forewings less distinct or entirely absent, the margins less strongly scalloped.

ab. privataria Dannehl. Ent. 3.41 p. 318 1927.

Among delunaria. The moon of the forewings entirely extinct.

It is not stated whether or not this applies to the discoidal spot or the moon-shaped apical spot.

ab. constricta Hofer. Verh. zool.-bot. Ges. Wien. 73 p. (194) 1924.

The outer transverse line of both wings is displaced or moved inwards towards the line nearest the base so that the lines all stand on the basal side of the small discoidal spot and therefore give the impression of a broad, dark transverse band.

ab. sublunaria Stephens. Ill. Faust. 3 p. 170 pl. 28 f. 1 1829-31.

Much darker and more purple, almost exactly the colour of some *S. tetralunaria*.

ab. roseofasciata Lempke. Tijdschr. Ent. 94 p. 297 1951.

On the forewings outwards from the postmedian line a beautiful broad rosy band.

ab. brunnea Lempke. Tijdschr. Ent. 94 p. 297 1951.

Ground colour brown without yellow tint.

ab. maculosa Lempke. Tijdschr. Ent. 94 p. 297 1951.

Ground colour coarsely speckled.

ab. nigrumbrata Lempke. Tijdschr. Ent. 94 p. 297 1951.

Forewings with blackish central shade.

ab. deumbrata Lempke. Tijdschr. Ent. 94 p. 297 1951.

The central shade fails completely.

ab. centripatala Cockayne. Ent. Rec. 64 p. 241 pl. 10 f. 5 1952.

On the forewing the outermost transverse line is displaced inwards towards the base especially at the costa and lies about 1.5 mm. internal to the discocellular nervure, the discoidal spot being absent. On the hindwing both lines are displaced towards the base, the outer one lying internal to the discoidal spot, which is unusually small.

ab. laetimarginata Cockayne. Ent. Rec. 64 p. 240 1952.

The ground colour is pale, so that the transverse lines show very clearly; the whole area of both wings outside the transverse line is cream coloured with the exception of the apical mark.



## tetralunaria Hufn. aberrational forms etc.

gen. aest. aestiva Staudinger. Cat. Ed. 2 p. 157 1871.

Specimens of the summer generation, smaller, lighter, more reddish, the under side more inclining to orange.

ab. kuhnei Kuhne. Ent. Z. 22 p. 70 1908.

Violaceous rose-red, without the irroration of the type form.

ab. clara Lempke. Tijdschr. Ent. 94 p. 298 1951.

Specimens of the first generation with much paler brown-yellow ground colour of the dark parts, instead of purple-brown.

ab. rufescens Lempke. Tijdschr. Ent. 94 p. 298 1951.

Ground colour of the darker parts reddish. Spring brood type.

ab. nigrolineata Lempke. Tijdschr. Ent. 94 p. 298 1951.

The transverse lines and central shade blackish.

ab. obscura Lempke. Tijdschr. Ent. 94 p. 297 1951.

Ground colour black-brown, without the reddish tint of the spring form, therefore clearly darker, the light parts normal.

ab. lacticolor Cockayne. Ent. Rec. 64 p. 241 pl. 10 f. 15 1952.

The ground colour is very pale, cream coloured and slightly smoky, so that the transverse lines and the dark longitudinal line along the median nervure stand out very distinctly.

ab. postradiata Cockayne. Ent. Rec. 64 p. 241 pl. 10 f. 12 1952.

On the hindwing there are whitish rays along the nervures, particularly conspicuous along nervures 3 & 4.

ab. notabilis Thierry-Mieg. Ann. Soc. Ent. Belg. 54 p. 386 1910.

From the figure in Milliere Icon 1870 pl. 116 f. 3. The figure shows the forewing, from the postmedian line to the base, reddish-purple, but from the line, outwards to the margin, blackish with no tint of red. Hindwings completely blackish with faint whitish median line. The apical blotch of the forewing remains rather light reddish brown, outlined in whitish.

ab. nigroscens Cockayne & Kettlewell. Ent. Rec. 61 p. 12 pl. 1 f. 1-8 1949.

Male, spring gen. Underside. All the normal markings are present, the darker parts of both wings are deep smoky purplish-brown; the areas along the costa, usually pinkish-white, remain unaltered, but the other pinkish-white areas are more or less suffused with leaden grey. Thorax and abdomen dark brown.

Female. All the darker parts of the wings are smoky blackish-brown; the whitish areas on the costa and external to the postmedian line are very distinct and without the usual pinkish tint. The female has a much more black and white appearance than the male.

ab. viridobrunnea Schawerda. Ent. Z. 54 p. 263 1941.

Male with violet ground colour, dark greenish transverse median bands on both wings the light reddish-brown colour lacking.

This may be racial but Schawerda described it as "ab".

ab. ? hybrid? clarilunaria Dannohl. Ent. Z. 41 p. 319 1927.

Possible hybrid between tetralunaria and lunaria. Unites the characters of these two species; relatively small and has the only slightly tinted colour of lunaria. Formation of the lines as in the latter, the pale sharply marked lunules however are distinctly as in tetralunaria.



Geom. 222, continued.

tetralunaria Hufn. continued.

ab. brunnea Schnaider. Polsk Pismo Ent. 19 s. 255





gen. aest. helvolaria Robson & Gardner. Young Nat. 7 p.33 1886. (List.)  
Second brood specimens, smaller and paler.

ab. hoffmanni Schreiber. Regensburg Ber. Nat. Ver. 9 p.58  
Both wings strongly darkened in the distal area, from the median line; the nervures and fringes deep black.

ab. mariscolora Lempke. Tijdschr. Ent. 94 p.299 1951.  
Female with the rich color of the male.

ab. flavescens Lempke. Tijdschr. Ent. 94 p.299 1951.  
Ground colour of the wings yellow-brown, approximately the same as the squarish blotch at the outer margin of the forewings in normal specimens. For the rest normal.

ab. obsolota Lempke. Tijdschr. Ent. 94 p.299 1951.  
Central shade and second transverse line of the forewings obsolete.

ab. pallidaria Cockayne. Ent. Mon. Mag. 84 p.266 pl. E f. 6 1948.  
Male with the colour of the female; the area which is usually orange is pale lemon-yellow and the marks on the costa, which are usually white are whitish lilac; all the dark markings are absent. Hindwing with the proximal half paler than the distal half; all markings are absent.

ab. loniceraria Stokl. Polsk Pismo Ent. I p.62  
The ground colour mostly whitish-lilac, the markings dirty lilac-grey; the ochreous-yellow is confined to the middle of the outer margin.



dolabraria L. aberrational forms etc.

ab. rufescens Lempke. Tijdschr. Ent. 94 p. 308 1951.  
Ground colour of the forewings reddish.

ab. aurantiaca Lempke. Tijdschr. Ent. 94 p. 308 1951.  
Ground colour of the forewings orange-brown.

ab. atrox Zerny. Verh. zool.-bot. Ges. Wien 58 p. (270) 1908.  
Ground colour of the forewings dark chestnut-brown, blackened towards the base and inner angle, only at the extreme base the normal ground colour, leather-yellow, is retained in one small area. There is nothing to be seen of the fine rust-brown irrorations of the type form. Ground colour of hindwings reddish-brown-grey, blackened towards the hind angle.

gen. aest. aestiva Dioszeghy. Verh. Siebenburg Ver. Naturw. 83-84 p. 131 1935.  
Ground colour more vivid yellow, the violet irrorations less dense than in the first generation.



bidentata Clerck. aberrational forms etc.

~~ab. pallida~~

ab. pallida Lempke. Tijdschr. Ent. 94 p. 300 1951.  
Ground colour pale whitish brown-grey

ab. ochracea Fleck. Bull. Soc. stinte Bucuresti II p. 174 1904.

= ochrea Derenne. Lamb. 27 p. 49 1927.

Ground colour yellowish.

ab. dealbata Nordstrom. Svenska Fjar. 1941 p. 297.

The white bordering along the outer transverse line of the forewing is absent.

ab. defasciata Kiefer. Kraneher's Ent. Jahrb. 25 p. 136 1916.

= defasciata Hannemann. Int. Ent. Z. II p. 62 1917.

Only some white dots remain of the transverse lines of the forewing.

ab. trapezoides Schille. Polsk. Pismo Ent. 3 p. II 1924.

The inner transverse line of the forewing sharply broken at the median vein from whence it goes, parallel with second transverse line, to the inner margin.

ab. edentula Kroulikowsky. Soc. Ent. 23 p. 12 1908.

The small teeth on outer margin of forewing are absent.

ab. fuscmarginata Lempke. Tijdschr. Ent. 94 p. 300 1951.

The marginal area of the forewings darkened.

~~ab. dentaria~~ Hubner. Beitr. Ent. 4 p. (7) - 1. I-f. B. 1786-89.

= fusca Lempke. Tijdschr. Ent. 94 p. 300 1951.

Ground colour dark brown-grey.

ab. ferruginea Cockayne. Ent. Rec. 58 p. 95 1946.

Forewings deep bright ferrugineous colour with the transverse lines indistinct; the hindwings less rufous.

ab. fenestrata Cockayne. Ent. Rec. 58 p. 94 1946.

The internoural spaces of both wings are so thinly sealed as to be more or less transparent, but the sealing of the nervures, margins and fringes is normal.

ab. paradoxa Cockayne. Ent. Rec. 58 p. 95 1946.

The basal and marginal areas are dark brown, but the median area is pale.

ab. semifasciata Cockayne. Ent. Mon. Mag. 84 p. 266 1948.

Ground colour of the forewings is light brown and devoid of speckling; the ante and postmedian lines are much thickened and not sharply defined on the side towards the median area; the nervures crossing the median area are dark brown. hindwing paler brown with a very broad postmedian line, which touches the discal spot and is ill-defined on its inner aspect. The form has a banded appearance.

ab. haefneri agner. Ent. Ver. 6 p. 45 1918.

Much darker than typical form, the males almost black-brown, the dark shadow of both transverse lines is absorbed by the dark ground colour, the white transverse lines therefore much more distinct. These lines are more or less broken up into dots on the veins. Females with this white line not quite broken up and the dark shadow of the lines is apparent but the colour is much darker than typical form.

ab. approximata Lempke. Tijdschr. Ent. 94 p. 300 1951. (d. seri t. vol. 50 p. 147)

The two transverse lines are close together.





ab. *clausa* Lankke. Tijdschr. Ent. 94 p. 301 1951. (descript. vol. 82 p. 1 /.)  
The first and second transverse lines of the forewing are joined or united to the inner margin.

ab. *mediorufa* Cockayne. Proc. 3. Lond. Ent. Nat. Hist. Soc. 1937-38 p. 83 1938.  
Both wings deep blackish-brown, almost black, with the median area smooth, bright, rufous, dark red-brown, or pale brown with red-brown nervures. A form of *nigra* *surtur*.

ab. *nigra* Prout. Ent. Rec. 13 p. 336 1901.  
= *surtur* Bang-Haas. Iris 20 p. 84 1907.  
Both wings are deep blackish-brown, almost black, with the markings either just visible or completely obscured. The antennae, legs and abdomen are black, but the thorax is light coloured.

ab. *nigrofenestrata* Cockayne. Ent. Rec. 58 p. 94 pl. 10 f. II 1946.  
This is ab. *fenestrata* occurring in ab. *nigra* Prout. See *fenestrata* Cockayne.

ab. *bowateri* Cockayne. Ent. Rec. 64 p. 324 pl. 14 figs. I-II 1952.  
Distinct from ab. *nigra* and occurs in combination with *mediorufa* and *nigrofenestrata*. Thorax almost always reddish-orange or buff, and rarely brown as in *nigra*. On the upperside of both wings there are interneural buff markings at or near the margin, or the whole border is buff, lightly or heavily sprinkled with black scales. In one specimen in addition to the buff border, almost the whole of the hindwing is suffused with buff very lightly sprinkled with black scales, but there is a blackish streak running from the base through the discoidal spot to the dark transverse line and a shorter blackish streak close to the inner margin. In others there is the same arrangement of blackish streaks on the hindwing, but a buff area occupies the basal part between the discoidal spot and the black streak near the inner margin; along the margin there are only short interneural buff wedges. The fringes, even in the blackest specimens, are buff coloured on both wings. The abdomen is black with reddish-orange or buff scales at the extremity.



## elinguaria L. aberrational forms etc.

ab. pallida Lempke. Tijdschr. Ent. 94 p. 302 1951.  
Ground colour whitish-yellow, markings normal.

ab. aurantiaca Lempke. Tijdschr. Ent. 94 p. 302 1951.  
Ground colour orange-yellow.

ab. unicolor Prout. Seitz 4 p. 332 1915.  
The markings completely absent. Prout says the ground colour is uniformly "reddish" which seems rather exaggerated.

ab. fasciata Gillmer. Ent. Wochenbl. (Insektenbörse) 25 p. 118 1908.  
The median band uniformly fuscous.

ab. defasciata Lempke. Tijdschr. Ent. 94 p. 302 1951.  
Wings unicolorously yellow with normal strong markings of transverse lines and spots but without the usual feeble darkening of the central area.

ab. nigrolineata Lempke. Tijdschr. Ent. 94 p. 302 1951.  
The transverse lines of the forewing are black.

ab. delineata Lempke. Tijdschr. Ent. 94 p. 302 1951.  
The central area of the forewings is normally feebly darkened but the two darker transverse lines bordering it, fail.

ab. fusca Reutti. Lepidopteron Fauna Badens. 1898 p. 120.  
= insolitaria Fuehs. Jahrb. Nassau. Ver. Nat. 54 p. 55 1901.  
= solitaria Fuehs. Int. Ent. 2.3 p. 234 1910.  
Wings fuscous, only the transverse lines remaining yellow.  
Fuehs described his forms as dark rust-brown, the transverse stripes and fringes bright yellow.

ab. depuncta Stephan. Iris 39 p. 96 1925.  
The discoidal spot on the hindwings completely absent, on the forewings hardly visible.

ab. reticulata Lempke. Tijdschr. Ent. 94 p. 303 1951.  
The marginal area, or a still greater part of the wings, densely covered with dark strae, for the rest normal.

ab. radiata Cockayne. Ent. Mon. Mag. 84 p. 266 pl. E f. 7 1948.  
The two transverse lines of the forewing unite at the inner margin and the triangle thus formed is brown as in fasciata Gillm. In each internodal space on the outer margins there is a dark brown streak, running inwards from a point just internal to the termen for 3 or 4 mm. On the hindwing in each internodal space there is a conspicuous dark brown spot.

ab. crassilineata Cockayne. Ent. Mon. Mag. 84 p. 266 1948. (barrett. pl. 293 f. 1 D.)  
Ground colour is pale to dark orange, of the same shade in the median area as the rest of the wing; the ante and postmedian lines are very thick, dark brown and ill-defined on the distal aspect. On the hindwing the postmedian line is thick, dark brown and ill-defined on the inner aspect.

ab. trapezaria Boisduval. Gen. Ind. Meth. 1840 p. 184.  
Transverse lines diverging more, the small marginal spots absent. Pale ground.



ab. marginenuda Lemke. Tijdschr. Ent. 94 p. 302 1951.

The dark points along the outer margin of the wings fail, for the rest normal.

ab. aequaria Fuchs. Int. Ent. 2.3 p. 234 1910.

Very similar to defasciata Lemke. Wings unicolorously light yellow without a darkening of the median area; the two transverse lines bordering the median area weak.

In defasciata the transverse lines are strong.

ab. prunarioides Helbig. Ent. 2.53 p. 287 1940.

On the forewing is a pale brownish longitudinal rippling as seen in A. prunaria L. This appears sometimes well developed, sometimes less strongly, and crosses the wing in its entire breadth and also occurs on the outer margin of the hindwing. The ground colour of the forewing is light brownish and dull in tone, not yellow as in typical form, with the middle area of the same colour, therefore unicolorous as in aequaria Fuchs. The inner transverse line is dark brown or blackish, the outer one ochreous. Hindwings paler, the striae light brownish. The form is extremely like the rippled forms of prunaria which are covered with dark striae.

ab. obviaria Ljungdahl. Ent. Fiskr. 39 p. 89 f. 2 1918.

= juneta Schille. Z. Wiss. Ins. Biol. 14 p. 121 1918.

= signatipennis Newstead & Smith. Entomologist 52 p. 227 1919. fig.

= triangulata. Closs. Int. Ent. 2.14 p. 28 1920.

The transverse lines of the forewing unite at the inner margin, forming a large triangle, usually of a darker tint than the ground colour.

ab. brevivenia Cockayne. Ent. Rec. 58 p. 16 1946.

The costa is shortened, accentuating the concavity of the termen. The discoidal is usually large and very close to the postmedian line which curves inward to an unusual extent as it approaches the inner margin. In spite of their short wings the specimens are not undersized; all have nervure 8 missing in both forewings.





ab. alba Schneider. Polsk. Pismo Ent. I9 - .249

ab. pallens Schneider. Polsk. Pismo Ent. I9 - .250.

ab. albomaculata Schneider. Polsk. Pismo Ent. I9 - .254.

ab. flava Schneider. Polsk. Pismo Ent. I9 - .254.

ab. nigrata Schneider. Polsk. Pismo Ent. I9 - .254

ab. rufa Schneider. Polsk. Pismo Ent. I9 - .254.

ab. virescens Schneider. Polsk. Pismo Ent. I9 - .254



ab. bifidaria Haworth. Lep. Brit. 1809 p. 291.

Wings reddish with broad red stripe bifid towards the wide margin.

This is generally accepted as meaning that the transverse lines meet at the inner margin and separated on the costal margin.

ab. cuneata Rudolph. Notul. Ent. 15 p. 47 pl. I f. II 1935.

The transverse lines of the forewing thickened and approximated are fused together above the inner margin but do not reach it.

ab. tangens Lempke. Tijdschr. Ent. 94 p. 318 1951. (descript. vol. 90 p. 147.)

The transverse lines of the forewing meet below the middle and then separate again.

ab. discuneta Witsche. Verh. zool.-bot. Ges. Wien. 73 p. (26) 1924.

The black discoidal spot is absent on the forewing.

ab. olivacea Hoffmann. Mitt. Naturw. Ver. Steiermark 55 p. 13 1919.

= korbi Schawerda. Mitt. München Ent. Ges. 12 p. 26 1922.

= montanaria Stattermayer. Int. Ent. 2.24 p. 253 1930.

Ground colour greyish-green.

In the korbi the hindwings of male are rosy-grey and in the female grey.

In montanaria the hindwings are rose sprinkled with darker scales, in the male.

ab. algeriae Stattermayer. Int. Ent. 2.24 p. 253 1930.

Forewings between the veins dotted with greyish-violet, the veins brownish yellow. Hindwings rose-coloured, sprinkled with darker scales.

Possibly a race but described as a form of subsp. mauretanaria Statt., together with another form - montanaria Statt.

ab. lugubrata Rudolph. Notul. Ent. 15 p. 46 1935.

Forewings except the outer area darkened with blackish. On the hindwing margin, between the two transverse lines, filled in with blackish.

ab. biroii Dioszeghy. Verh. Siebenburg Ver. Naturw. 83-84 p. 131 1935.

The basal and outer area of the forewing blackish-brown, middle area pale, weakly sprinkled. Hindwing with the outer area from the middle line similarly blackish-brown.

ab. chobauti Testout. Bull. Soc. Linn. Lyon 5 p. 95, 140

Markings fairly dark violet-brown with a sprinkling, which is sometimes confluent, of the same colour. The antemedian line is indistinctly thickened and there is a band of spots in the marginal area.

ab. maculata Lempke. Tijdschr. Ent. 94 p. 318 1951.

The white spot on the outer margin of the forewings fails.

ab. euprea Schwingenschuss. 1. Wien Ent. Ges. 39 p. 218 1954.

Completely markingless, with a copper-red ground colour.

Almost the same form as ab. nuda Hepp. Described under the Algerian race.

ab. fusca Schwingenschuss. 1. Wien Ent. Ges. 39 p. 218 1954.

Completely markingless with black-brown ground colour. Described under Algerian subspecies.

ab. glabra Wize. Polsk. Pismo Ent. 13 p. III 1934.

With no striae or dusting on the wings.



## pennaria L. aberrational forms etc.

ab. flavescens Sehawerda. Verh. zool.-bot. Ges. Wien. 72 p. (91) 1922.  
The ground colour ochre-yellow, transverse lines weak and somewhat brownish,  
no dark scaling.

ab. nubilosa Hopp. Ent. Anz. 12 p. 12 1932.

Not the same form as the preceding which has no dark scaling.

Male with the forewings sulphur-yellow, transverse lines ashy-grey, otherwise  
sprinkled with ash-grey scales denser in a cloudy manner near the transverse  
lines, particularly in the middle area and outer margin. Hindwing whitish-yellow,  
transverse lines suffused grey, margins with ash-grey scales. Abdomen yellow,  
tuft orange.

ab. aurantiaca Lempke. Tijdschr. Ent. 94 p. 317 1951.

Ground colour orange.

ab. olivacea Hoffmann. Mitt. Naturw. Ver. Steiermark 55 p. 13 1919. (X. see next page.)  
Ground colour greyish-green.

For further synonymy of this form, see next page of these notes.

ab. grisea Hannemann. Int. Ent. 3. 14 p. 123 1920.

Ground colour grey.

ab. rosea Foltin. Z. Wien. Ent. Ver. 27 p. 36 1942.

Ground colour rose. Male form, the colour of normal ♀.

ab. mariscolora Lempke. Tijdschr. Ent. 94 p. 318 1951.

Female with the reddish ground colour of the normal male.

ab. rufescens Lempke. Tijdschr. Ent. 94 p. 318 1951.

Male. Ground colour deep red-brown or deep reddish.

ab. castiniaria Lambillion. Rev. Mens. Ent. Soc. 5 p. 7 1905.

The wings <sup>irregularly</sup> charged with blackish atoms, <sup>the margin of fw. very dark,</sup> ~~the margin of the ground colour,~~  
Transitional to the following obscura) there remain 3 light areas on the costa, the  
central one extending down as far as the discoidal spot

ab. obscura Aigner. Ann. Mus. Nat. Hung. 4 p. 527 pl. 14 f. 12 1906.

Wings very dark red-brown to blackish, the veins still reddish.

ab. rufolineata Lempke. Tijdschr. Ent. 94 p. 318 1951.

The two transverse lines of the forewing red.

ab. atrolineata Varnecke. Z. Wien. Ent. Ges. 29 p. 250 1944.

Female with the two transverse lines of the forewing blackish.

ab. obsoletelineata Lempke. Tijdschr. Ent. 94 p. 318 1951.

The two transverse lines of the forewing obsolete.

ab. nuda Hopp. Ent. Anz. 12 p. 12 1932.

Male with pale reddish-yellow ground with the two transverse lines of the fore-  
wing and also the discoidal spot and apical spot, absent, only on the costa there  
are two reddish-brown dots, remnants of the transverse lines.

ab. vicinalis Rudolph. Notul. Ent. 15 p. 47 pl. I f. 12 1935.

The two transverse lines of the forewing are close together.









